July 17, 1962 S. N. ROSENTHAL 3,044,101

NIB BUSHINGS

Filed Jan. 5, 1961

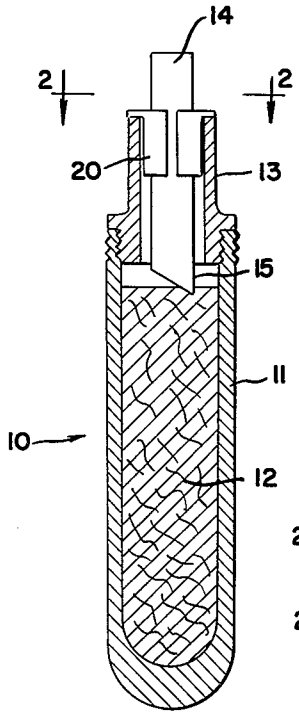


Fig. 1

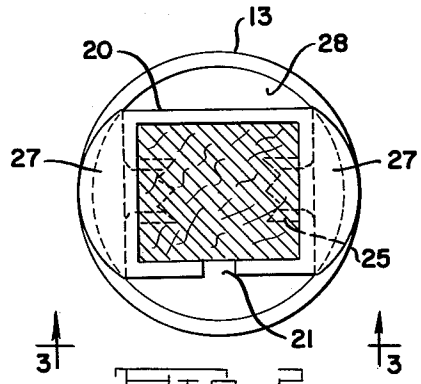


Fig. 2

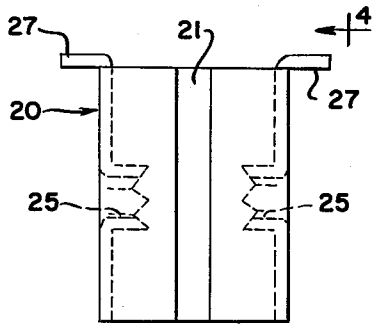


Fig. 3

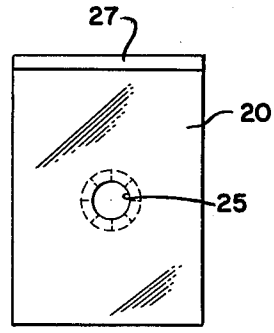


Fig. 4

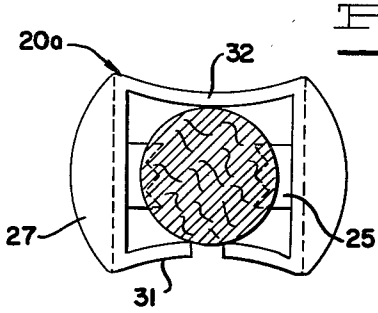


Fig. 5

INVENTOR.

SIDNEY N. ROSENTHAL

BY

Cullen & Canton

ATTORNEYS

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NIB BUSHINGS

Sidney N. Rosenthal, Belle Harbor, N.Y., assignor to Speedry Chemical Products, Inc., Richmond Hill, N.Y.

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This invention relates to a nib bushing and particularly for a bushing for removably supporting a felt nib within the barrel of felt nib pens or similar writing implements.

Felt nib writing implements or pens, such as is disclosed in my prior Patent No. 2,416,596, issued February 25, 1947, usually are formed with a barrel containing an absorbent material soaked in ink and an open end having a felt nib secured therein. The bottom end of the nib contacts the absorbent material and the opposite end extends above the writing implement for applying the ink to a surface. The pen barrel is normally accurately formed and is relatively expensive and thus, is normally expected to have a long life. However, the nibs wear out in due course usually because they become dirty, and also quite frequently, it is desirable to use nibs of different sizes for different writing purposes. Since these devices are relatively expensive, it is not always feasible to have a number of them available, each with a different size nib.

Thus, it is an object of this invention to provide a nib bushing or adapter which clamps to a felt nib and supports that nib within the tubular open end of the writing implement, and which may be removed when desired and replaced with a different nib bushing having a different size or shape nib or a clean, new nib. Hence, the nib, which is inexpensive, can be easily replaced without necessity of discarding or altering the considerably more expensive pen.

A further object of this invention is to form a nib bushing suitable for clamping and securing a nib within the open tubular end of a writing implement but which, although positively clamping against the nib, does not compress the nib, since compression of the felt would alter the writing characteristics of the device by interfering with the flow of ink.

These and other objects and advantages of this invention will become apparent upon reading the following description, of which the attached drawings form a part:

In these drawings:

FIG. 1 is an elevational view in cross-section of a felt nib writing implement or a pen.

FIG. 2 is a top view of the tubular end of the pen, taken in the direction of arrows 2—2 of FIG. 1 but greatly enlarged.

FIG. 3 is a front elevational view of the bushing, per se, taken in the direction of arrows 3—3 of FIG. 2, and

FIG. 4 is a side elevational view taken in the direction of arrows 4—4 of FIG. 3.

FIG. 5 is a top view of a modified bushing with a circular nib clamped therein.

With reference to FIG. 1, the writing implement herein, generally designated as **10**, is formed of a barrel **11** stuffed with an absorbent packing **12** saturated with ink. At its upper end is threaded a tubular open end or nozzle **13** within which a nib **14** is secured. The open end is circular in cross-section and the nib may be either square, rectangular or circular in cross-section. The top of the nib extends above the top of the tubular end of the pen for transferring ink to a writing surface, and its bottom end **15** is in contact wtih the packing **12** so that ink may be transferred from the packing and through the felt nib by capillary action.

The specific improvement of this invention is the nib bushing **20** which is preferably formed out of a single flat sheet of thin gauge metal which is resilient and

bendable and which is bent into a tubular shape that is square in cross-section. One wall is split at **21** with a relatively wide spacing between the edges defining the split. The two opposite side walls, which are connected to the split wall, are provided with inwardly struck, sharp spikes **25** which are normal to the walls upon which they are formed and extend inwardly of the tube a short distance. These same walls have flanges **27** formed at their top ends, the flanges being bent outwardly of the tube and also being normal to the walls upon which they are formed.

In operation, the nib bushing would be bent open so that the walls are spread apart, and particularly the walls upon which the spikes are formed are spread apart, and the elongated nib is inserted within the bushing. The nib is then clamped in the bushing by bending the walls back into their shape, as shown in FIG. 2. Here, the spikes cut or bite into the felt to positively grasp the felt nib bushing but without compressing the felt.

As shown in FIG. 2, the nib in the drawing is of the same size as the interior of the bushing and the spikes are located at approximately the center of their respective walls and are struck-in in a flower or star-like shape. The external dimensions of the bushing are approximately the size of the internal diameter of the pen tubular end **13** so that the bushing may be pushed into the tubular end **13** with its four corners in line contact with the interior wall of the tube and so that it is frictionally held therein by virtue of its tight fit and its resiliency. The bushing fits into the tube to the point where its flanges **27** rest upon the top open edge of the tube **13**. These flanges act as stops to prevent the bushing from being pushed too far into the tube and also as a handle means for grasping the bushing and pulling it out when the bushing is to be replaced with a new nib. Also, the shape of the bushing is such, being square relative to the circular tube **13**, that air spaces are formed along the sides, as at **28**, for the free flow of air into the pen to thus vent the pen.

FIG. 5 illustrates a modification wherein the bushing **20***a* is substantially identical to that described before but wherein the split wall **31** and the wall **32** opposite to it are bowed inwardly a slight degree in order to hold a circular in cross-section nib which is of a diameter considerably smaller that the diameter of the writing implement tubular end **13**. Otherwise, the construction is the same as that mentioned above.

This invention may be further developed within the scope of the following attached claim. Accordingly, it is desired that the foregoing description be read as being merely illustrative of an operative embodiment of this invention and not in a strictly limiting sense.

I now claim:

A felt nib and bushing unit removably supported within a circular in cross-section tubular shaped open end of a writing implement, comprising a square cross-section felt nib and a square in cross-section tube formed of a single flat sheet of metal bent into a tubular shape; the external diagonal dimensions of the bushing being the same as the diameter of the tubular end of the writing implement for snugly fitting the bushing-nib unit within said tubular end and with its four corners each in line contact with the interior wall of the tubular end for frictional securement within said tubular end; one wall of the bushing being split along its full length, with the wall edges defining the split being spaced apart a short distance; the two opposite walls which are connected to such split wall each having struck-in sharp spikes formed at their center portions and extending inwardly of the tube normal to their respective walls upon which they are formed; and a flange formed on one end of each of said opposite walls and extending normal to their respective

walls and outwardly of the tube, the flanges being formed to rest upon and in contact with the free edge of the writing implement open tubular end when the nib and bushing unit is inserted in said tubular end; whereby an elongated square felt nib may be inserted in the square bushing with its opposite ends extending out of the opposite ends of the bushing, and with the spikes biting into the felt nib without compressing it, for supporting the felt nib in the bushing and the bushing-nib unit in the writing implement, stopped by the flanges, and said bushing-nib unit being removable as a unit from the tubular end.

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