United States Patent [19]

Kuparinen

[11] **3,834,409**

[45] **Sept. 10, 1974**

[54] **CLEANSING RECEPTACLE FOR CAPILLARY WRITING PEN PARTS**

[75] Inventor: **Lasse Kuparinen,** Hamburg, Germany

[73] Assignee: **Koh-I-Noor Rapidograph, Inc.,** Bloomsbury, N.J.

[22] Filed: **Feb. 22, 1973**

[21] Appl. No.: **334,827**

[30] **Foreign Application Priority Data**

Feb. 25, 1972 Germany 7207146

[52] **U.S. Cl.** **134/117,** 134/135, 206/371, 211/69.5

[51] **Int. Cl.** **B08b 3/04**

[58] **Field of Search** ..... 15/257.05, 257.07, 257.072, 15/257.073, 257.074, 257.075, 423; 21/82 R, 82 H, 84, 83, 86, 87; 134/117, 137, 143; 206/5 A, 15.1 A, 15.1 C, 15.1 D; 211/69.2, 69.5; 220/17; 222/583, 584, 585

[56] **References Cited**

UNITED STATES PATENTS

1,187,566	6/1916	Taylor	211/69 UX
1,983,491	12/1934	Polhemus	21/84
2,454,602	11/1948	Gunther	21/87
2,565,899	8/1951	Wilcox	134/117 UX
3,035,589	5/1962	King	134/137
3,101,087	8/1963	Watson	134/143
3,428,380	2/1969	Danjczek	211/69.5 X
3,460,552	8/1969	Sturgeon	134/143 X

FOREIGN PATENTS OR APPLICATIONS

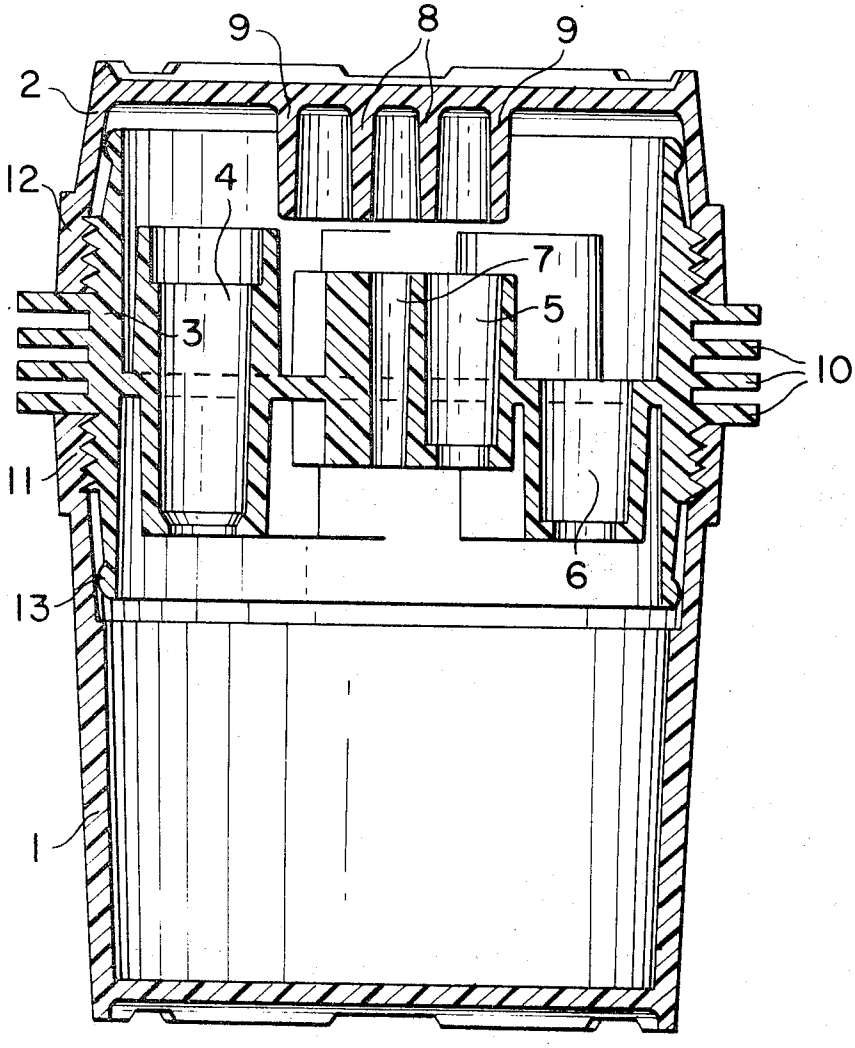
406,073	2/1934	Great Britain	15/257.073

Primary Examiner—Daniel Blum

[57] **ABSTRACT**

A closed reservoir of the type used for cleansing capillary pen parts so as to remove dried ink and the like. The receptacle includes a base reservoir containing the cleansing liquid, an intermediate support platform complementally engagable with the reservoir and including a plurality of sleeves conformed to the exterior configuration of the several pen parts, for example cap, reservoir, writing tip; and a cover which closes the reservoir and support. The receptacle is distinguished in that the cover holds the pen parts in place during shaking so as to agitate the cleansing liquid, yet the intermediate platform may be removed from reservoir and cover and supported independently for washing or drying.

9 Claims, 3 Drawing Figures



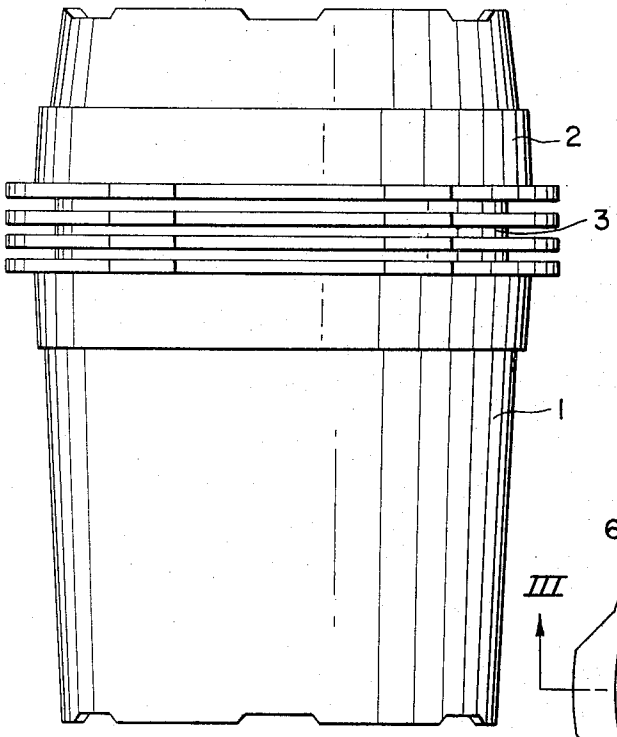


FIG. 1

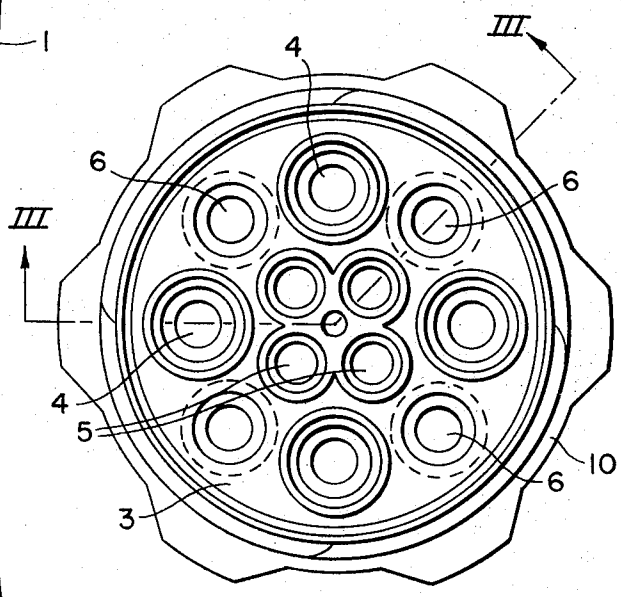


FIG. 2

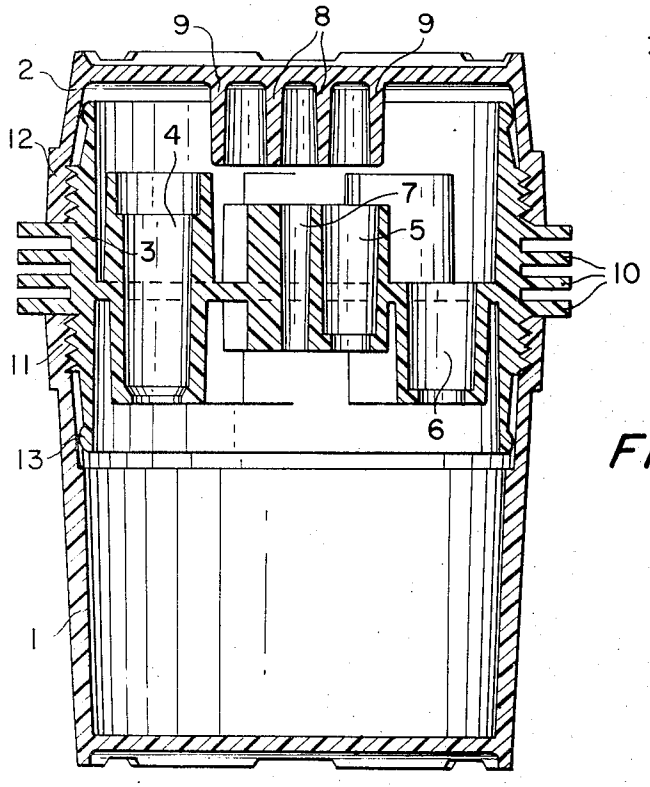


FIG. 3

CLEANSING RECEPTACLE FOR CAPILLARY WRITING PEN PARTS

BACKGROUND OF THE INVENTION

1. Field of the Invention

The invention relates to a cleansing receptacle, especially for cleaning the several components of capillary tube writing pens. The receptacle includes both a lower part reservoir, a tip cover part and an intermediate platform for support of the pen parts being cleaned.

2. Description of the Prior Art

Cleansing receptacles of this type for example, West German Pat. No. 1,269,013, have an intermediate floor in the lower part, with passages for liquid, on which floor the parts to be cleaned are laid. The receptacle is then closed and turned over so that the cleansing liquid passes from the lower part through the liquid passages, and the components to be cleaned lie on the exterior surface of the cover part. After a certain time the receptacle is turned over again and the cleansing liquid passes back into the lower part, with the components falling back and lying on the intermediate floor. By loosening the cover part, the components can then be taken off the intermediate floor, and the cleansing liquid used again.

Various drawbacks are inherent in this arrangement, however. Thus, cleansing liquid usually still clings to the components that are to be cleaned, and thus has to be removed in a supplementary washing process. Moreover, it is necessary to wash clean the pen components individually, or to place them in another receptacle so as to free the pen components of the cleansing liquid. Besides, this type of conventional cleansing receptacle only allows a "soaking" of the components that are to be cleaned, because they only lie motionless for a while in the cleansing liquid. Shaking of the receptacle to improve the cleaning action is not possible because this could move the components and, thus, damage the components that are to be cleaned. Such a "soaking process" is inadequate, especially for the cleaning of individual components of capillary writers.

SUMMARY OF THE INVENTION

It is the purpose of this invention, therefore, to develop a cleansing receptacle that makes possible easy and practical cleaning of the components of capillary writers, as well as subsequent rinsing off of the cleaning liquid.

This is achieved in a cleansing receptacle of the afore-mentioned type, by means of an intermediate packing or supporting part that can be introduced between the lower part and the cover, which presents open sleeves to receive and support the individual components, as well as a through passage for cleansing liquid.

The cleansing receptacle of the invention comprises therefore three separate parts that can be assembled to form a closed container. The individual components to be cleaned are held in sleeves upon the intermediate part, and retained at their upper ends by the cover, so that the receptacle can be shaken to promote the cleansing process, whereby the components are flushed by cleaning liquid that passes on the one hand from below into the sleeves and on the other hand also through a central flow opening into the cover part, and

thence from above into the sleeves, to make possible a complete cleansing of the components.

After the cleaning process has been terminated, the intermediate part can be taken out of the cleansing receptacle with the components in the sleeves. To remove the cleansing liquid from the components, the intermediate part can be held under running water, so that the user can clean and rinse the said components without having to handle them between the individual steps.

The intermediate part is advantageously screwed into the lower part and also into the cover part, so that it constitutes an integral connection that serves as a packing or support, yet is readily detached.

The long axes of the sleeves advantageously run parallel to the long axis of the cleansing receptacle. Thereby, sleeves of the same configuration can be disposed in circles that are concentric to the long axis of the container, and on the inner surface of the cover part there can be downwardly projecting annular ribs, also concentric to the long axis of the cleansing receptacle, the radius of the said annular ribs being smaller in the upper zone than the radius of the circle on which the appurtenant cover sleeves lie.

In this way, the arrangement is such that the annular ribs hold the top of the pen components that are to be cleaned, which components are of different lengths, firmly in the sleeves when the cover part is screwed on, or it is such that the said components can execute only limited axial movement.

If the lower outer edge of the intermediate part is lower than the bottom of the sleeves which hold the pen components, it is possible to remove the intermediate part along with the inserted pen components and position the intermediate part upon a support, without having the components within the sleeves or possibly any portions which extend downwardly somewhat beyond the sleeves come into contact with the support.

To simplify separation of the three parts of the cleansing receptacle, the intermediate part when set in place within the lower part may present a projecting and engaging peripheral edge between the lower part and the cover part, whereby separation of the intermediate part and the cover part will be facilitated, as in the case of the lower part and the intermediate part.

Since it may happen that a user will invert the device so as to rest it upon the cover part after shaking, and then screw off the lower part from the intermediate part, it is advantageous that the capacity of the inner chamber of the lower part up to the level of the lower edge of the intermediate part be about the same as the capacity of the inner chamber from this lower edge to the cover surface of the cover part, so that then the total amount of cleansing liquid first placed in the lower part can be accommodated by the combination of cover part and intermediate part when inverted, without having the cleansing liquid run over from the opened receptacle.

Running over or running down of cleansing liquid on the outer wall of the container during shaking can be prevented in that the lower, as well as the upper edge of the intermediate part may be supplied with a peripheral seal against the inner wall of the lower or upper part, so that between the intermediate part and the lower part, as well as between the intermediate part and the upper part, no cleansing liquid can collect.

BRIEF DESCRIPTION OF THE DRAWINGS

The invention is described in more detail below, with reference to figures that illustrate an example of embodiment.

FIG. **1** shows a side view of a cleansing receptacle according to the invention with a lower receptacle serving as a reservoir for the cleaning liquid, an intermediate part with axial sleeves for supporting the pen parts to be cleaned and a top cover;

FIG. **2** shows a top view of the receptacle of FIG. **1**, with the cover part removed; and

FIG. **3** shows a horizontal section taken along line III—III of FIG. **2**.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

The illustrated cleansing receptacle consists of a lower part **1**, cover part **2** and intermediate part **3** introduced between them. The connection of immediate part **3** and lower part **1** is effected via a thread **11**, while the intermediate part is connected to cover part **2** by means of a thread **12**. In FIG. **3** it is shown that in the assembled state, lower peripheral edge or bead **13** of the intermediate part is applied as a seal against the inner wall of the lower part and a similar upper peripheral edge of the intermediate part is applied as a seal to the inner wall of the cover part, so that in the zones between the inner wall of the lower part or cover part and the outer wall of the intermediate part, there can be no fluid penetration.

In intermediate part **3** there are sleeves **4, 5, 6** whose long axis runs parallel to the long axis of the cleansing receptacle, said sleeves being open at both top and bottom. These sleeves have different dimensions so that they can accommodate different components of capillary pens for cleaning. Thus, for example in sleeve **5**, the cylindrical body containing the drop weight with capillary writing type fits; such that the inset cylindrical body may extend somewhat below sleeve **5**. Sleeve **4** can receive the sockets or caps in which the cylindrical bodies of the capillary tubes can be fitted. Sleeves **6** may serve to accept the cartridge-shaped India ink holders which can be set on the sockets.

It will be appreciated that the sleeves, which are respectively of the same general configuration, can be disposed on an arc concentrically to the long axis of the cleansing receptacle (FIG. **2**). In the cover part there are concentrically disposed annular ribs **8** and **9**. The radius of these annular ribs is such that they are respectively in the region of the appurtenant sleeve openings **4, 5, 6**, and when the container is closed they are in the region of the inserted individual pen components which are to be cleaned. In such case, the individual pen components in sleeve **5** are held within the socket defined by annular rib **8**, so as to be secured against axial movement or, in the case of sleeves **4** and **6**, the pen components are permitted only limited axial movement. No annular ribs are provided for sleeves **6**, because the India ink receptacles (not illustrated) are so long that the interior cover surface of cover part **2** prevents a larger axial movement.

In addition to the sleeves **4, 5, 6**, in intermediate part **3** there is an axial passage **7** that effects a connection between lower part **1** and cover part **2**.

For cleaning the components of one or more capillary writers, cleansing liquid is placed in lower part **1**, whereby the level of the liquid advantageously is not higher than up to the lower sealing edge **13** of intermediate part **3** that is to be set in. The pen components that are to be cleaned are inserted in the appropriate sleeves **4, 5, 6** of the intermediate part, after or before this intermediate part has been screwed into the lower part **1**. Thereafter, cover part **2** is screwed onto intermediate part **3**. This connection of the individual parts is facilitated in that the intermediate part presents a projecting engaging edge **10** between lower part **1** and cover part **2**, which edge makes joining and releasing of the individual parts easier.

The closed cleansing receptacle can now be shaken vigorously, so that the cleansing liquid will penetrate from below into the sleeves **4, 5, 6**, and in and through the individual pen components, as well as via passage **7** and the sleeves into the cover part, from which it again flows over the components that are to be cleaned. In this shaking, the components are held in position by the sleeves and annular ribs **8** or **9** or by the surface of cover part **2**, so that there is no need to anticipate damage.

When the cleaning process is finished, the cover part is screwed off without flow of cleaning liquid down upon intermediate part **3**, because the upper peripheral edge of the intermediate part has been applied as a seal to the inner wall of cover part **2**.

Intermediate part **3** with the components in the sleeves is taken out of lower part **1** and can be held by its gripping or engaging bands **10** under running water so that the remaining cleansing liquid is washed out of the pen components without need to handle individually the components.

Intermediate part **3** with the components set in can be taken off for drying the rinsed components, for example, without removal of the components from the sleeves, and without danger of damage, because lower edge **13** of intermediate part **3** is lower than the sleeve bottoms, so that the intermediate part rests upon lower edge **13**, and also any parts of the pen components that may extend below the sleeves, e.g. the capillary of a cylindrical body, will not come into contact with a supporting surface.

Lower part **1**, cover part **2** and intermediate part **3** can be readily made of plastic, by injection molding.

Manifestly, the receptacle may be used for support and cleansing of various articles other than pen components.

I claim:

1. A cleansing receptacle of the type used for cleaning the several components of capillary type writing pens comprising:

A. a base reservoir;

B. an intermediate part support platform complementally engageable with said base reservoir, including:

i. a plurality of axially extending support sleeves communicating with the inner portion of said base reservoir and extending axially from the top half thereof to the inner portion of said reservoir, further including a plurality of bottom apertures communicating with said base reservoir; and

ii. an outwardly extending periphery engageable with said reservoir top part, said periphery including at least one hand gripping band extending beyond the periphery of said lower base reservoir as a hand grip and

iii. said intermediate platform including an axial conduit, so as to permit cleansing fluid to pass from said lower base reservoir into said cover section; and

C. a cover engaging said intermediate part in fluid type relationship, said cover including a plurality of downwardly extending ribs defining top sockets registerable with said support sleeves.

2. A cleansing receptacle as claimed in claim **1,** said intermediate platform including a lower peripheral bead engaging said reservoir interior as a liquid seal.

3. A cleansing receptacle as claimed in claim **2,** said intermediate platform including top peripheral bead engaging the interior of said cover as a liquid seal.

4. A cleansing receptacle as claimed in claim **3,** said sleeves on said intermediate platform being configured to complementally engage and support capillary writing pen parts.

5. A cleansing receptacle as claimed in claim **4,** said cover interior and said reservoir interior including support shoulders complementally engagable with corresponding support shoulders defined in said intermediate part.

6. A cleansing receptacle as claimed in claim **5,** said intermediate platform including a bottom edge defined as an independent support surface.

7. A cleansing receptacle as claimed in claim **5,** said cover, reservoir and intermediate support shoulders including complementary threaded portions.

8. A cleansing receptacle as claimed in claim **7,** the radius of said top sockets being smaller in their upper zone than in said intermediate platform.

9. A cleansing receptacle as claimed in claim **6,** said bottom edge of said support platform extending below the bottoms of said sleeves so as to suspend said pen parts independently of a supporting surface.

* * * * *