

Nov. 16, 1943.

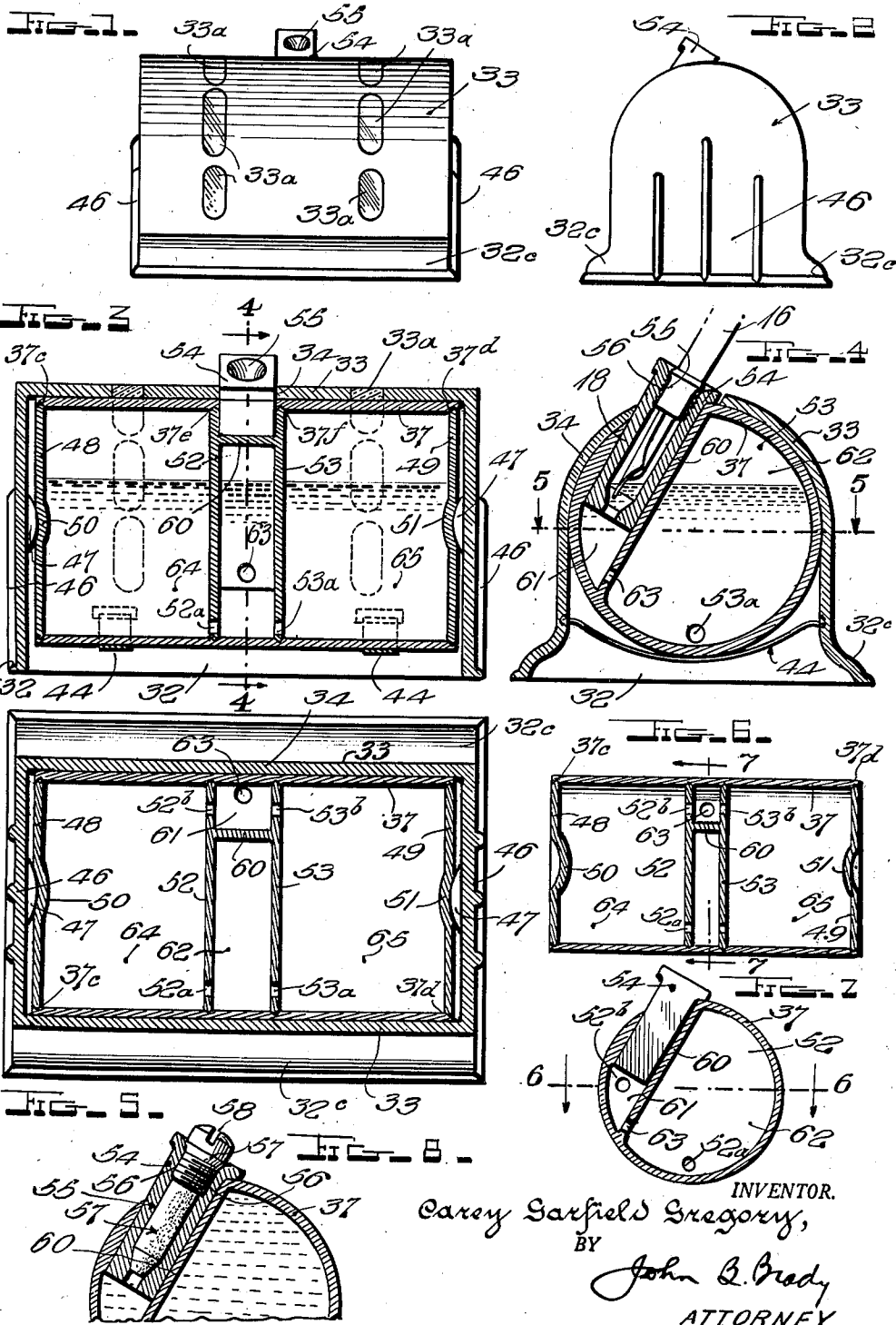
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2,334,191

DESK SET

Filed Sept. 6, 1941

2 Sheets-Sheet 1



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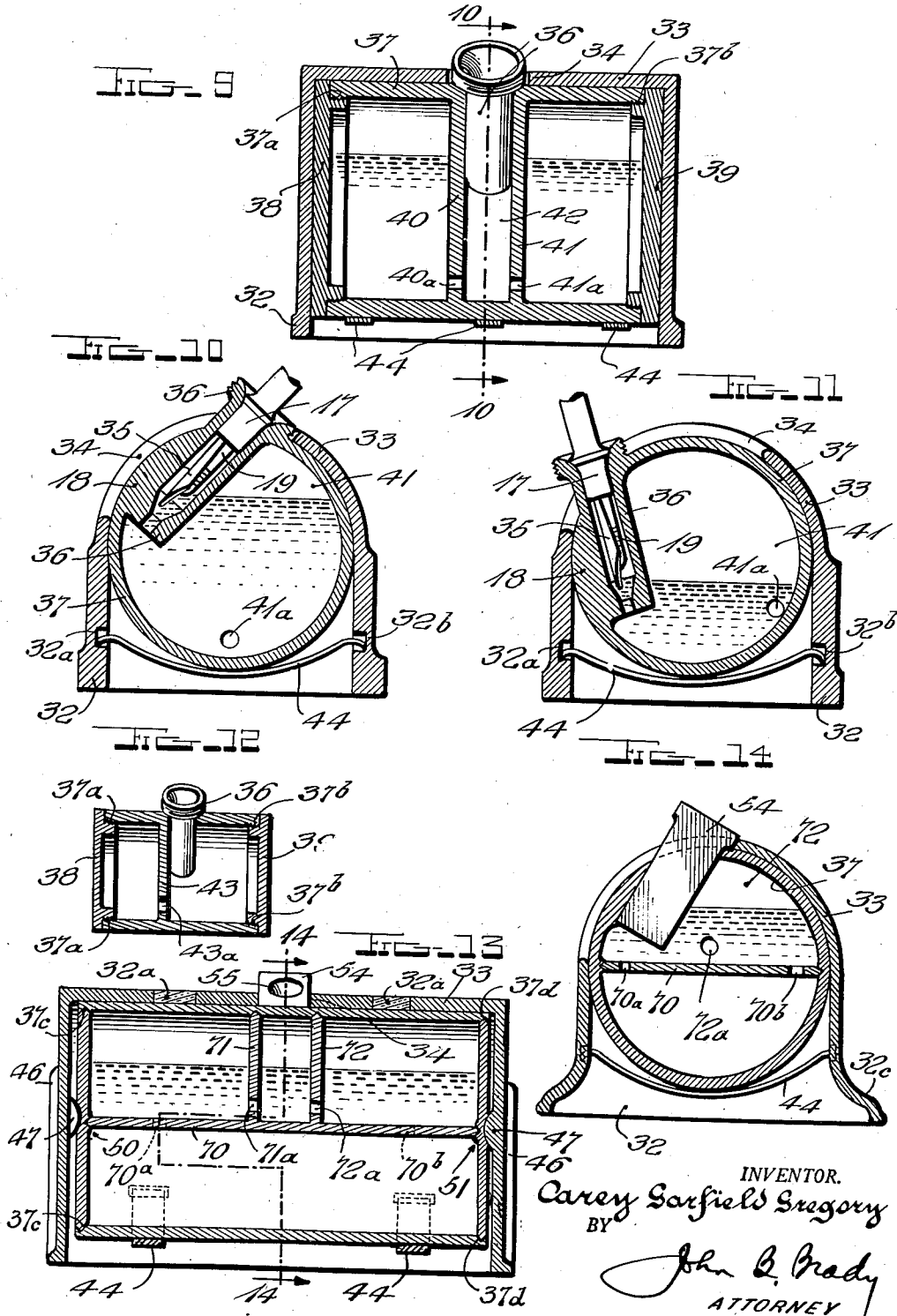
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2 Sheets-Sheet 2



UNITED STATES PATENT OFFICE

2,334,191

DESK SET

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5 Claims. (Cl. 120—70)

My invention relates broadly to desk sets and more particularly to an improved construction of desk set in which a renewable ink container operating on hydrostatic principles may be supplied to a desk set from time to time.

One of the objects of my invention is to provide a novel form of desk set including a desk stand constructed to receive a renewable hydrostatic ink container for use with a capillary feed dip pen.

Another object of my invention is to provide a construction of renewable cartridge-like container for ink for use in a hydrostatic type of desk set wherein the cartridge-like container includes mounting means for a capillary feed dip pen and is angularly shiftable to selected positions within the desk stand to render available all of the ink contained therein.

Still another object of my invention is to provide a construction of renewable container for ink for use in a desk set of the hydrostatic type in which the container may be mounted in position with respect to the desk stand to allow substantially the entire utilization of available ink supply in the container.

A further object of my invention is to provide a construction of merchandisable package containing an integrally formed pen receiving receptacle so arranged that when the package is mounted in properly selected position with respect to the desk stand that the ink therein may be supplied to a capillary feed dip pen adapted to be mounted in the pen receiving receptacle in the said merchandisable package.

A still further object of my invention is to provide a construction of replaceable ink container for hydrostatic desk sets in which the container includes an integrally formed pen receiving receptacle and partition plates perforated for the flow regulation and feeding of ink to the dip pen.

Another object of my invention is to provide a construction of merchandisable ink container for use in desk sets operating on the hydrostatic principle and which are readily capable of factory refill for resale of the replenished ink container to the customer.

Still another object of my invention is to provide a construction of molded renewable ink container for hydrostatic desk sets in which separable wall-like closures are provided for the ink container and sealed at the several joints thereof for insuring a fluid-tight merchandisable package constituting an ink container.

Other and further objects of my invention re-

side in the construction and arrangement of hydrostatic ink container and desk stand as set forth more fully in the specification hereinafter following by reference to the accompanying drawings, in which:

Figure 1 is a front elevational view of one form of desk set employing my invention; Fig. 2 is an end view of the desk set illustrated in Fig. 1; Fig. 3 is an enlarged longitudinal sectional view taken through the desk set of Figs. 1 and 2; Fig. 4 is a vertical sectional view taken on line 4—4 of Fig. 3; Fig. 5 is a horizontal sectional view taken on line 5—5 through the desk set of Figs. 1—4; Fig. 6 is a longitudinal sectional view through the ink container employed in the form of my invention shown in Figs. 1—5; Fig. 7 is a transverse sectional view through the ink container taken on line 7—7 of Fig. 6; Fig. 8 is a fragmentary sectional view showing an arrangement of plug which is employed for closing the ink container when the ink container is initially sold as a merchandisable article; Fig. 9 is a longitudinal sectional view through an ink stand of modified form illustrating a modified arrangement of flow regulating partitions within the ink container; Fig. 10 is a transverse sectional view taken substantially on line 10—10 of Fig. 9 and showing the angular position to which the replaceable ink container is shifted when the ink supply in the container is relatively high; Fig. 11 is a transverse sectional view similar to the view shown in Fig. 10, except that the container is shown shifted to an angular position in which the container is maintained while there is a relatively low level of ink in the container; Fig. 12 illustrates a further modified form of merchandisable ink container of the general type used in the form of my invention shown in Figs. 9—11 but containing only a single flow regulating apertured partition; Fig. 13 is a longitudinal sectional view through a further modified form of desk set embodying my invention, wherein the container for ink is provided with a special arrangement of partition plates to facilitate the uniform supply of ink over an extended period of use; and Fig. 14 is a vertical sectional view taken on line 14—14 of Fig. 13.

The desk set of my present invention makes use of the principles I originally disclosed in my application for Letters Patent Serial No. 728,026, filed May 28, 1934, now Patent 2,026,539, granted January 7, 1936, for Combined ink well and bottle. The principles involved in the replaceable ink container employed in my present invention are disclosed generally in my aforesaid

patent and particularly Fig. 11 thereof except that my present invention embodies many novel and improved features as will be set forth in detail hereinafter. My invention is directed to the production of a readily merchandisable ink container which may be sold to owners of desk sets as a renewable or replaceable ink container and having means for directly receiving capillary feed dip pen associated with the desk set as originally supplied. The replaceable container of my invention is readily insertable into the desk set in place of an empty container which is returnable to the factory for refill and resale. The ink container may be mounted in a suitable stand in such position as will permit the consumption of substantially all of the ink therein. The container and dip pen receiving receptacle are molded integrally and the walls of the receptacle so joined as to provide a liquid-tight enclosure for the ink. A screw cap is normally engaged over the dip pen receiving receptacle when the container is merchandised and is removed by the user when the container is placed in position in the desk stand. Control of the ink flow is regulated by means of variously positioned partition members or member apertured for the passage of ink between compartments formed in the container. Where the container is cylindrical in form, the desk stand is provided with various means for controlling the angular disposition to which the container may be shifted.

Referring to the drawings in detail, Figs. 1-8 show the desk set of my invention embodying the renewable merchandise ink package. The molded semi-cylindrical top 33 is provided with ornamental skirt portions 32c and ornamental end portions 46 within which the container 37 is housed. In order that the quantity of ink in container 37 may be observed from time to time, I may provide transparencies in the form of symmetrically arranged inserts 33a through which the ink level is visible. The slot 34 in the casing 33 permits the passage of the polygonal shaped block 54 which constitutes the pen receiving receptacle. The bore 55 of the pen receiving receptacle 54 is shaped to receive and guide the pen 16 which is inserted therein.

The container 37 is provided with end plates 48 and 49 which form fluid-tight peripheral joints with the cylindrical wall 37 of the container as represented at 37c and 37d. The end walls 48 and 49 are centrally in-struck or recessed or depressed as represented at 50 and 51 respectively thereby enabling the container 37 to be slipped into position through the open base 32 and snapped into swivel engagement with the protuberances 47 formed centrally on the interior of the end walls of the casing 33. The container 37 when inserted in position through the open base 32 is then free to be angularly shifted when it is desired to utilize the lowest level of the ink within the receptacle. The ink container 37 is maintained in position as explained in the form of my invention illustrated in Figs. 9-12 by means of yieldable strip members 44 having their ends engageable in recesses 32a and 32b in the interior walls of the casing 33.

The container 37 is provided with internally arranged partition members 52 and 53 which are suitably secured in spaced positions with respect to the interior wall of the container 37 by fluid-tight joints 37c and 37f. The partition members 52 and 53 are arranged on opposite sides of the polygonal block 54 constituting the pen

receiving receptacle. An additional partition member 60 is arranged intermediate the partition members 52 and 53 extending immediately adjacent the pen receiving receptacle 54 and arranged substantially as a chord. The partition member 60 forms a chordal chamber 61 immediately adjacent the inner terminus of the pen receiving receptacle 54 and the wall of the container 37. Flow of ink from the chordal chamber 61 to the chamber 62 intermediate partition members 52 and 53 is controlled through aperture 63. Flow of ink between the symmetrically arranged chambers 64 and 65 which are arranged between end wall 48 and transverse partition 52 and between end wall 49 and transverse partition 53, respectively, is controlled in the arrangement shown in Figs. 3 and 4 through apertures 52a and 53a. In the arrangement shown in Fig. 5 the partition members 52 and 53 also have apertures 52b and 53b arranged therein by which the flow of ink is controlled from chambers 64 and 65, respectively, to the chordal chamber 61. In Figs. 6 and 7 I have shown the ink container wholly removed from the casing constituting the desk set. In Fig. 5 I have shown the manner in which the container filled with ink is sold. The pen receiving receptacle 54 which is shaped as shown in 55 for receiving the dip pen is provided with internally arranged screw threads 56 with which a plug member 57 is arranged to coact. The plug member 57 has an extension 58 which conforms with the shape of the bore 55 of the pen receiving receptacle 54 and permits the merchandisable package to be sealed against fluid leakage. A slot 58 is provided in the headed end 57 to facilitate removal of the plug when the package is inserted in the desk set and is ready for use. The manner of assembling the merchandisable package in the desk set is similar to the arrangement described in Figs. 9-11, in which yieldable strip members 44 snap into recesses 32a and 32b in the interior side walls of the open base 32 and maintaining the cylindrical ink container within the semi-cylindrical top 33 in a position in which the ink container is free to angularly shift to a position in which all of the ink within the container may be reached by the dip pen.

In Figs. 9-12 I have illustrated a modified form of desk set embodying the principles of my invention in which the merchandisable package constituting the ink container is inserted from beneath the open base of the desk stand indicated at 32. The base 32 is molded from plastic material and has a semi-cylindrical top contour which I have indicated at 33 with a slot 34 formed therein substantially in the middle of the casing and extending from a short distance on one side of the center to a longer distance on the opposite side of the center whereby the projecting end 35 of the dip pen receiving receptacle or guide 36 in the container 37 is free to be angularly shifted to a selected position for insuring the maintenance of the point 18 of the dip pen 16 and the capillary 19 of the dip pen 16 below the level of the ink in the container 37. The dip pen 16 has the annular portion 17 thereof shaped to coact with the shaped internal bore of the pen receiving receptacle or guide 36 for maintaining the pen in substantially sealed position in the pen receiving receptacle or guide 36 when the pen point 18 and the capillary 19 are submerged in the ink within the container 37.

The container 37 comprises a cylindrical portion which is screw threaded at opposite ends at

37a and 37b for receiving coacting externally screw threaded portions of end members 38 and 39. The end members 38 and 39 after being screw threaded into position are sealed with respect to the cylindrical wall 37 by suitable sealing means.

To insure the constant and uniform supply of ink to the point 18 of the dip pen, I provide partition members 40 and 41 within the cylindrical wall 37 of the container on opposite sides of the dip pen receiving receptacle or guide 36. Each of the partition members contains a port 40a and 41a for the passage of ink and air between the partitioned portions of the ink container 37. In the arrangement illustrated in Figs. 9-11 two balanced ink receiving receptacles and pressure chambers are provided which insure a constant delivery of ink to the central chamber 42 into which the pen receiving receptacle or guide 36 extends.

Somewhat comparable results are obtained by the construction illustrated in Fig. 12 in which a single partition member 43 is provided within the container 37. The single partition member 43 may be located in any desired position between the interior end of the receptacle 37 and the pen receiving receptacle or guide 36. The port 43a in partition 43 permits passage of ink and air between the compartments thus established within the container 37.

The container 37 is confined in position within the semi-cylindrical top 33 of open base 32 by means of a plurality of yieldable strip members 44 which may be disposed at spaced intervals and secured at opposite ends in recesses 32a and 32b formed in the interior walls of the open base 32. When it is desired to remove the container 39, the yieldable strip members 44 are withdrawn allowing the cylindrical container 37 to drop out of the open base 32. When it is desired to maintain the container 37 in position the container 37 is moved into position beneath the semi-cylindrical top 33 of the container through the open base 32 and then secured in position by yieldable strips 44 which resiliently and frictionally engage the lower cylindrical surface of cylindrical container 37. As the ink is consumed in container 37 it is angularly shifted between limits which will be understood by reference to Figs. 10 and 11 for maintaining the dip pen beneath the level of the ink in container 41. The merchandisable package in all of the arrangements illustrated forms both an ink bottle and a dip pen receiving receptacle or guide. The container is purchased with a sealing cap secured around the screw threaded skirt of the pen receiving receptacle or guide, which cap when removed places the container in condition ready to receive the dip pen. The various forms of mounting illustrated facilitate the positioning of the ink container in the desk set for receiving the dip pen in a convenient position for writing purposes.

In Figs. 13 and 14 I have shown a further modified arrangement of container for ink mounted in a desk set of the type heretofore described in Figs. 1-5. In this arrangement the container 37 has a diametrically extending longitudinally disposed partition plate 70 which connects with semi-circular formed partition plates 71 and 72 on opposite sides of the block 54 constituting the pen receiving receptacle. The diametrically extending partition 70 is apertured at 70a and 70b immediately adjacent the connection of the partition 70 with the interior wall of container 37.

The partitions 71 and 72 are apertured at 71a and 72b, thus permitting flow of ink between the chambers and the containers of an adequate ink supply immediately adjacent the dip pen point when the dip pen is in position.

The arrangement of chambers in the merchandisable package is such that a supply of ink is available at all times for the dip pen until the ink has become substantially exhausted.

In each instance I have for purposes of illustration shown the point of the dip pen somewhat elevated with respect to a minimum level to which the ink may drop in the container. It will be understood that in practice the mounting for the dip pen may extend further into the container than has been illustrated and reach in various angular positions substantially all of the ink in the container.

When the container has been emptied, provision may be made for return of the containers for credit for return to the factory for refill. The inexpensive character of the containers however makes it economically feasible to discard the containers as they are emptied and purchase a fresh container containing a new ink supply. The shape of the container and the desk set mounting means therefor renders the device practical to receive for display purposes advertising insignia which may be readily applied, for example, to the side walls or to the upper portion of the cylindrical wall of the molded structure 33 or to the cylindrical wall of the container 37 itself.

I realize that modifications may be made in the construction and arrangement of parts constituting the desk set of my invention and I desire that it be understood that modifications may be made within the scope of the appended claims without departing from the spirit of my invention.

What I claim as new and desire to secure by Letters Patent of the United States is as follows:

1. A desk set comprising a frame structure having an open base and a substantially semi-cylindrical top thereon slotted at substantially the center thereof, a cylindrical ink container adaptable to be passed through said open base into contacting relation with the interior of said semi-cylindrical top, a dip pen receiving receptacle or guide carried by said container and projecting exteriorly thereof and adapted to pass through the slotted opening in said semi-cylindrical top of said base, and means for confining said container within said base while being free to shift in angular position with respect to said base.

2. A desk set comprising a stand having an open base and a semi-cylindrical top with an opening therein, a cylindrical container for ink adapted to be passed through the open base of said stand to a position conforming with the interior semi-cylindrical wall of the top of said stand, a dip pen receiving receptacle or guide in one side of said cylindrical container and accessible through the opening in said stand whereby a dip pen may be inserted into or removed from said dip pen receiving receptacle or guide in said container, and means for yieldably securing said container in selected angular positions for submerging the point of the dip pen in ink within said cylindrical container.

3. A desk set comprising a stand having an open base and a semi-cylindrical top with an opening therein, a cylindrical container for ink adapted to be passed through the open base of said stand to a position conforming with the interior semi-cylindrical wall of the top of said stand, a dip pen receiving receptacle or guide in

one side of said cylindrical container and accessible through the opening in said stand whereby a dip pen may be inserted into or removed from said dip pen receiving receptacle or guide in said container, and a leaf spring detachably mounted with respect to the open base of said stand and adapted to yieldably press said cylindrical container into operative position with respect to the semi-cylindrical top of said stand.

4. A desk set comprising a stand having an open base and a semi-cylindrical top with an opening therein, a cylindrical container for ink adapted to be passed through the open base of said stand to a position conforming with the interior semi-cylindrical wall of the top of said stand, a dip pen receiving receptacle or guide in one side of said cylindrical container and accessible through the opening in said stand whereby a dip pen may be inserted into or removed from said dip pen receiving receptacle or guide in said container, and a plurality of leaf springs detachably engageable in side recesses interiorly of said stand and adapted to yieldably engage the low-

ermost portion of said cylindrical container for maintaining said container into engagement with the internal surface of the wall of the cylindrical top of said stand.

5. A desk set comprising a frame structure having an open base and a substantially semi-cylindrical top thereon slotted at substantially the center thereof, a substantially transparent cylindrical ink container adaptable to be passed through said open base into contacting relation with the interior of said semi-cylindrical top, a dip pen receiving receptacle or guide carried by said container and projecting exteriorly thereof and adapted to pass through the slotted opening in said semi-cylindrical top of said base, means for confining said container within said base while being free to shift in angular position with respect to said base, and means disposed in the substantially semi-cylindrical top of said frame structure for viewing the quantity of ink in said ink container.

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