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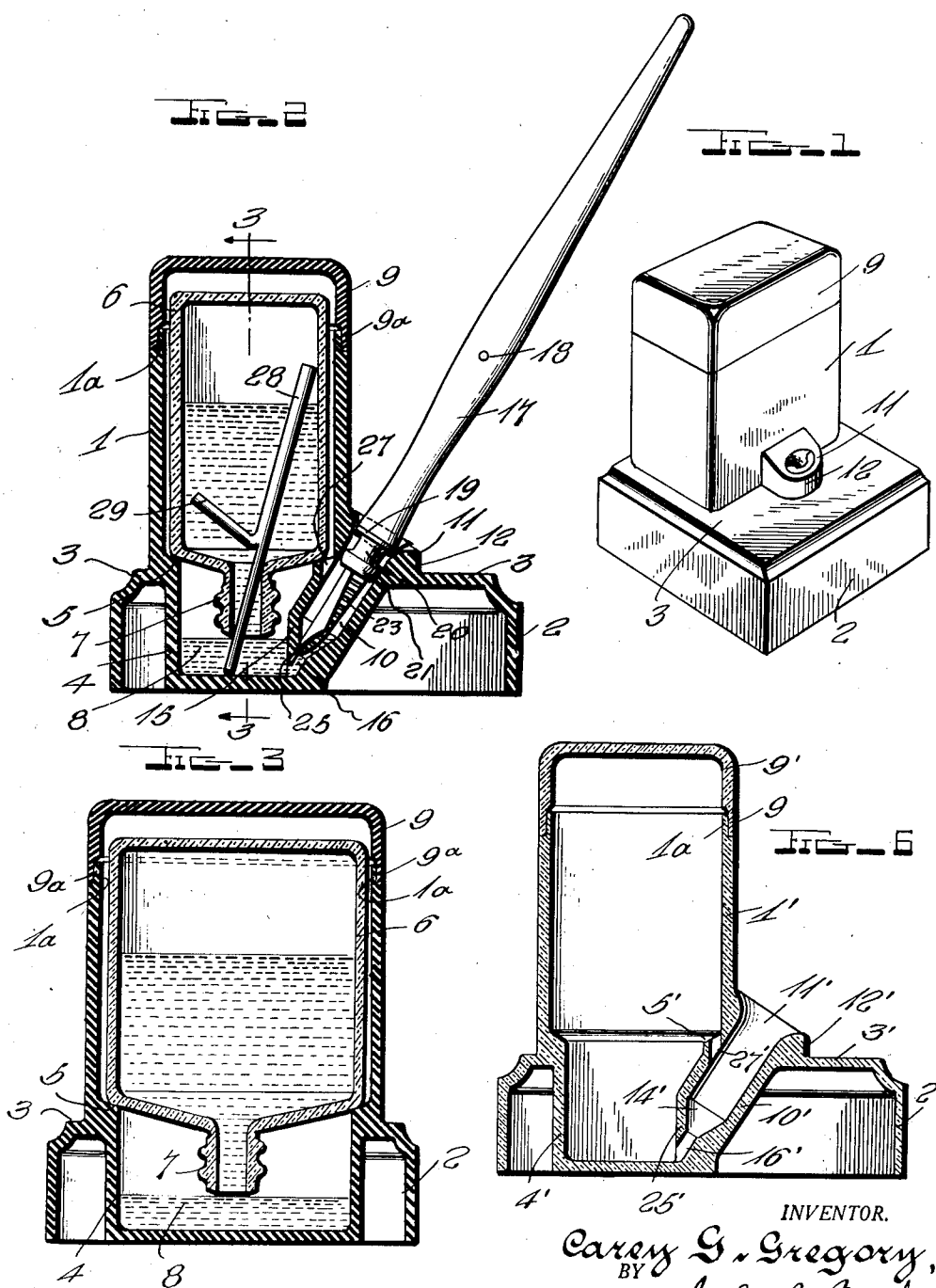
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2,148,941

DESK SET

Filed July 22, 1937

2 Sheets-Sheet 1



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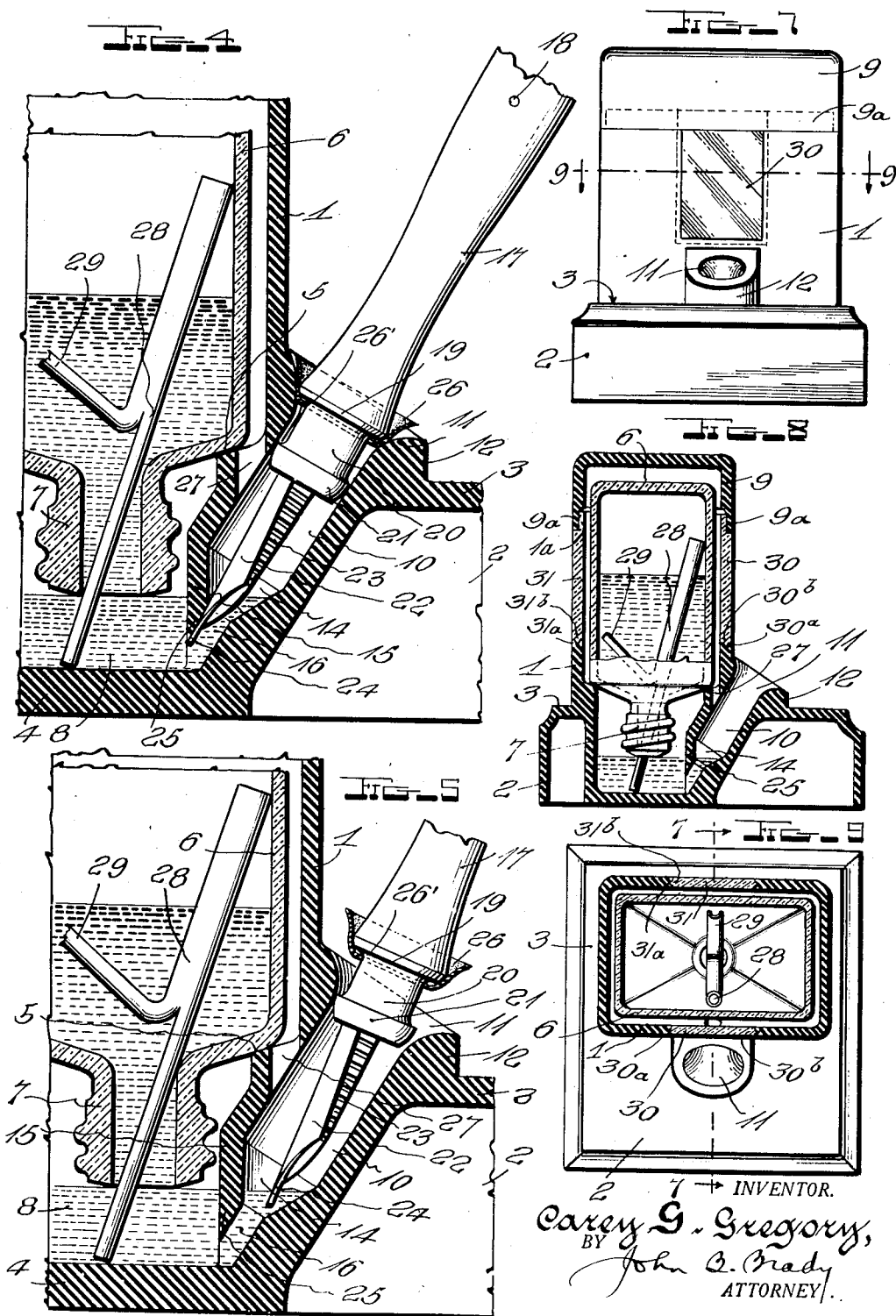
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2 Sheets-Sheet 2



## UNITED STATES PATENT OFFICE

2,148,941

DESK SET

Carey G. Gregory, Los Angeles, Calif.

Application July 22, 1937, Serial No. 155,088

6 Claims. (Cl. 120—59)

My invention relates broadly to desk sets and more particularly to an improved construction of inkwell and arrangement of dip pen for use in coaction therewith.

One of the objects of my invention is to provide a construction of inkwell of the hydrostatic pressure type which may be readily molded in one piece from synthetic materials.

Another object of my invention is to provide an inkwell of the hydrostatic type having an integrally molded base and ink reservoir supporting portion and including an integrally molded dip pen support capable of being manufactured inexpensively on a quantity production basis.

Still another object of my invention is to provide a construction of inkwell and integrally connected dip pen support by which the pen may be mounted in a convenient position at all times to allow withdrawal of the pen from a position substantially sealing the passage extending to the ink reservoir for a convenient writing operation.

A further object of my invention is to provide mounting means for a dip pen in a hydrostatic inkwell in which a substantially frictionless bind is provided between a portion of the dip pen holder and the pen guide portion of the inkwell whereby a relatively tight seal may be readily broken upon grasping and lifting the pen holder from the inkwell.

A still further object of my invention is to provide an arrangement for mounting a dip pen in the pen receiving receptacle of a hydrostatic inkwell in which coacting parts are provided in the pen receiving receptacle and on the dip pen so that the thrust of the pen upon insertion into the ink receiving receptacle is stopped at the mouth of the bore and a substantial seal established adjacent the mouth of the bore, the bore being arranged both as a guide and a securing means in coaction with the dip pen supplied for use with the hydrostatic inkwell.

Another object of my invention is to provide a construction of pen guide for a hydrostatic inkwell wherein the bore of the pen guide is shaped to coact with a soft resilient rubber disc carried by the dip pen for insuring the sealing of the pen receiving receptacle against dust and other foreign matter tending to interfere with the hydrostatic function of the inkwell.

Still another object of my invention is to provide a construction of hydrostatic inkwell having a pen receiving receptacle which is shaped to coact with an eccentrically arranged dip pen for establishing a substantially dust proof bind

between the pen holder and the pen receiving receptacle.

A further object of my invention is to provide a construction of hydrostatic inkwell molded from synthetic material and including a pen receiving receptacle and a compression escapement channel directly formed in the wall of the pen receiving receptacle.

A still further object of my invention is to provide a construction of molded hydrostatic inkwell which may be formed either wholly or partially from transparent material allowing the ink level in the ink reservoir to be readily observed from the exterior of the inkwell.

Other and further objects of my invention reside in the arrangement of seal between the dip pen holder and the pen receiving receptacle as set forth more fully in the specification hereinafter following by reference to the accompanying drawings in which:

Figure 1 is a perspective view of the hydrostatic inkwell of my invention; Fig. 2 is a vertical sectional view taken through the inkwell illustrated in Fig. 1; Fig. 3 is a vertical sectional view taken through the inkwell on line 3—3 of Fig. 2; Fig. 4 is an enlarged cross sectional view showing the position occupied by the dip pen when inserted in the pen receiving receptacle; Fig. 5 is a view similar to that of Fig. 4 but showing the manner in which the dip pen is removed from the pen receiving receptacle of the hydrostatic inkwell; Fig. 6 is a longitudinal cross sectional view taken through a modified form of inkwell embodying my invention wherein the inkwell is molded from transparent material, thus rendering visible the level of the ink in the ink reservoir at all times; Fig. 7 is a front view of a modified form of inkwell constructed in accordance with my invention and in which a transparent panel member is insertable in one wall of the inkwell permitting the level of the ink in the ink reservoir to be observed at all times; Fig. 8 is a longitudinal cross sectional view through the modified form of inkwell illustrated in Fig. 7 and showing the transparent panels disposed in both front and rear walls of the molded housing of the inkwell; and Fig. 9 is a horizontal sectional view on line 9—9 of Fig. 7.

The hydrostatic inkwell of my invention is molded from synthetic materials in one piece which includes the integrally connected housing, base and intermediate pen receiving receptacle. The pen receiving receptacle has the axis thereof disposed on an acute angle with respect to the horizontal base. The lower end of the pen re-

ceiving receptacle connects through a port with the ink reservoir. The funnel shaped entrance-way to the pen receiving receptacle is shaped to coact with the end of the dip pen holder and insertable into the pen receiving receptacle. A compression escapement channel extends through the wall of the pen receiving receptacle intermediate the port at the lower end thereof and the funnel shaped entrance in the upper end thereof. The pen employed in coaction with the inkwell of my invention is mounted eccentrically with respect to the pen holder allowing a substantially frictionless seal to be effected between the end of the pen holder and the pen receiving receptacle. The eccentric construction of the pen holder permits a relatively tight seal to be established between the pen holder and the pen receiving receptacle. The same can be readily broken however, without danger of sticking. The pen receiving receptacle and port at the lower extremity thereof is so shaped in coaction with the funnel shaped upper extremity of the pen receiving receptacle that upon insertion of the pen the thrust is stopped in the mouth of the bore of the pen receiving receptacle, thus protecting the pen point. Two zones of abutment are provided between the shaped end of the pen holder and the pen receiving receptacle, that is, a substantially angular abutment between the end of the pen holder and the interior cylindrical wall of the pen receiving receptacle and the angular abutment between the funnel shaped extremity of the pen receiving receptacle and a shaped portion of the dip pen. For further increasing the seal, I interpose a soft resilient rubber disc between a portion of the pen holder and the ink receiving receptacle.

I may construct the housing of the inkwell wholly from synthetic transparent material or removable panels may be provided in the walls of the housing, the panels having sufficient transparency to allow the level of the ink to be continuously observed or the panels being formed from suitably colored material for lending ornamental appearance to the inkwell.

Referring to the drawings in detail, reference character 1 designates the molded housing of the hydrostatic inkwell which is formed integrally with the horizontally extending hollow base 2. The horizontally extending hollow base 2 has a flat portion which I have indicated at 3 which bears substantially flange-like relation to the housing 1. The housing 1 includes not only the upwardly projecting portion 1 which extends above the flat portion 3 of base 2 but also a downwardly projecting portion 4 integrally united with the housing 1 and base 2. The downwardly projecting portion 4 is smaller in the lateral cross sectional area than is the upwardly projecting portion. The downwardly projecting portion 4 unites with the upwardly projecting portion 1 through an intermediate shoulder 5 disposed in a plane substantially above the plane of the flat portion 3 of base 2. The shoulder 5 provides a peripheral support for the inverted ink bottle which I have shown generally at 6. The ink bottle 6 has a relatively narrow neck 7 which extends downwardly into the ink receiving reservoir 8 formed in the downwardly projecting portion 4 of the inkwell. The ink bottle is introduced into the open top of the inkwell by removal of the top 9. The top 9 engages with the upper peripheral edge of housing 1 through the coacting peripheral portion 1a on housing 1 and peripheral portion 9a on cover 9.

Intermediate the base 2 and housing 1, I provide a pen receiving receptacle shown generally at 10. The pen receiving receptacle is disposed on an axis which extends at an acute angle with respect to the horizontal base. The pen receiving receptacle has a rounded funnel shaped upper end portion shown at 11 and elevated above the plane of the flat portion 3 of the base structure as indicated at 12. The lower extremity of the pen receiving receptacle 10 is tapered inwardly as represented at 14, forming a substantially frusto-conical section defined by the downwardly extending wall 15 of the downwardly projecting portion 4. The lower extremity of the frusto-conical section 14 is connected through port 16 with the ink receiving reservoir 8. The parts of the pen receiving receptacle 10 are proportioned in a very special manner for the purpose of supporting the dip pen in a manner which will be pointed out hereinafter in more detail.

The dip pen is shown as including a pen holder 17, a portion of which is constituted by a hollow barrel portion having a compression release aperture 18 therein. The pen holder terminates in a chamfered shoulder 19 which coacts with the funnel shaped upper end portion shown at 11. The pen holder supports the cylindrical member 20, terminated in a rounded shoulder 21 which coacts with the interior of the bore of the pen receiving receptacle 10. The member 20 provides a carrier for the eccentrically mounted pen point 22 which is maintained in position in coaction with the ink feed member 23. The eccentric mounting of the pen point may be readily observed by supporting the pen holder between the forefingers with the pen point bearing against one forefinger and the end of the pen holder against the forefinger of the other hand and then twisting the pen holder, whereupon the eccentricity imparted to the pen by reason of the particular mounting thereof in member 20 will be readily apparent. This eccentric mounting is important as it allows the entry of the pen point into the pen receiving receptacle by the coaction of chamfered shoulder 19 with the funnel shaped entrance 11 and the sealing relationship between rounded shoulder 21 and the interior bore of pen receiving receptacle 10 and also the abutment of the nib of the point at 24 against the upper wall portion 25 of the port 16.

The pen holder and pen carried thereon are thus so shaped as to insure a substantially dust tight seal for the inkwell. As the pen holder is thrust into the pen receiving receptacle, the nib of the pen at 24 is deflected by the frusto-conical wall portion 14 of the pen receiving receptacle to guide the pen point into a substantially central position tending to move the shoulders 19 and 21 into frictionless binding engagement with the funnel shaped extremity 11 and the internal bore 10 of the pen receiving receptacle. The thrust of the pen is stopped at the mouth of the bore 10. An abutment is established between chamfered shoulder 19 and funnel 11 and between shoulder 21 and the interior bore of pen receiving receptacle 10. There is a tendency for a suction seal to be established when the pen is thrust into the pen receiving receptacle. This suction is broken however, if the fingers grasp the pen holder and impart a slight angular movement thereto, rocking the pen holder in the pen receiving receptacle and breaking the vacuum seal at one side of the pen receiving receptacle.

In order to further seal the pen receiving receptacle into which the pen holder is inserted, I 75

provide a soft resilient rubber disc 26 which is apertured at 26' to fit around member 20 below chamfered shoulder 19. When the pen slides into the funnel shaped entrance 11 of the pen receiving receptacle, the rubber disc of its very nature conforms to the shape of the opening, sealing it against dust. Moreover, the soft rubber disc 26 shields the fingers against contact with ink deposits on the lower section of the pen holder. The soft resilient rubber characteristics of the disc are such that both the sealing function and the shielding function are readily performed by the disc.

I provide a compression escapement channel 27 intermediate the downwardly projecting portion 4 and the upwardly projecting portion 1 of the housing. The compression escapement channel is disposed between the upper portion of the downwardly projecting wall 15 and the front wall of the housing 1. The compression escapement channel 27 extends between the upper portion of pen receiving receptacle 10 and the interior of the housing 1 above the level of the ink in the ink receiving reservoir 8, insuring equalization of pressures in the hydrostatic inkwell and pen receiving receptacle.

I may provide a capillary for insuring the continuous feeding of ink from the ink bottle 6 to the ink receiving reservoir 8. I have indicated the capillary at 28 having a branch portion 29 for insuring the continuous feeding of the ink. In Fig. 9 I have shown more clearly the construction of capillary wherein the upper portion thereof is substantially tubular and the lower portion is split into two semi-cylindrical portions, one of which extends into the ink receiving reservoir 8 and the other of which extends upwardly into the ink bottle 6.

In order to permit observation of the supply of ink in the ink bottle 6 I may provide transparent panel sections 30 or 31 in the front or rear walls of the housing 1. The housing 1 is slotted and provided with grooves 30a or 31a into which the panels 30 or 31 having coacting tongues 30b or 31b may slide. The panels 30 or 31, instead of being transparent, may be of colored material for imparting ornamentation to the inkwell.

I may construct the inkwell wholly from transparent material so that the supply of ink in the ink bottle 6 is at all times readily observable and also the inkwell provides a high ornamental appearance as a fixture for the desk. The arrangement of the transparent inkwell is shown in Fig. 6 in which I have numbered all of the parts heretofore explained with corresponding characters with a prime mark added thereto. The same integral construction of the several parts including the base, the housing, the ink receiving reservoir, and the pen receiving receptacle is employed in the form illustrated in Fig. 6 as is the case in the figures as heretofore explained.

I have found the hydrostatic inkwell of my invention highly practical in its construction and operation, and while I have described my invention in certain preferred embodiments, I desire that it be understood that modifications may be made and that no limitations upon my invention are intended other than may be imposed by the scope of the appended claims.

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

1. A desk set comprising an integrally formed container and base structure, said container including a downwardly extending portion and an

upwardly projecting portion with a shoulder intermediate said portions, an inverted ink bottle having a peripheral portion thereof supported by said shoulder, a closure for said container providing an air space around and above said bottle, a pen guide formed integrally with said container and opening into said downwardly extending portion, said pen guide having a pressure equalizing port communicating with said air space substantially through said shoulder.

2. A desk set comprising an integrally formed container and base structure of substantially transparent material, said container including a downwardly extending portion and an upwardly projecting portion with a shoulder intermediate said portions, an inverted ink bottle of substantially transparent material having a peripheral portion thereof supported by said shoulder, a closure for said container providing an air space about said bottle above said shoulder, a pen guide formed integrally with said container and opening into said downwardly extending portion, said pen guide having a pressure equalizing port communicating with said air space substantially through said shoulder.

3. A desk set comprising an integrally formed container and base structure, said container including a downwardly extending portion and an upwardly projecting portion with a shoulder intermediate said portions, and inverted ink bottle having a peripheral portion thereof supported by said shoulder, a closure for said container providing an air space about said bottle above said shoulder, a pen guide formed integrally with said container and opening into said downwardly extending portion, said pen guide having a pressure equalizing port communicating with said air space substantially through said shoulder, the downwardly extending portion of said container being enlarged immediately behind said pen guide and providing a channel for feeding ink from said downwardly extending portion to the base of said pen guide.

4. A desk set comprising in combination, an inkwell having a pen supporting receptacle integrally connected therewith and a capillary filling pen adapted to be mounted in the pen supporting receptacle, said pen supporting receptacle including a substantially funnel shaped upper terminus and a tapered lower terminus disposed below the normal level of the ink in the inkwell, said capillary filling pen including a pen holder and a pen point eccentrically disposed with respect to the pen holder, a shaped end on said pen holder adapted to establish sealing connection with the interior wall of the substantially funnel shaped upper terminus of the pen supporting receptacle when the nibs of the capillary filling pen approach the tapered lower terminus of the pen supporting receptacle.

5. A desk set comprising in combination, an inkwell having a pen receiving receptacle integrally connected therewith and a capillary filling pen adapted to be mounted in the pen receiving receptacle, said pen receiving receptacle having spaced sealing zones therein and including a substantially funnel shaped upper terminus and a tapered lower terminus disposed below the normal level of the ink in the inkwell and constituting a pen point centering means, said capillary filling pen including a pen holder, a pair of spaced sealing zones adjacent the end of said pen holder adapted to establish sealing connections with the coacting sealing zones of the substantially funnel

shaped upper terminus of the pen receiving receptacle when the nibs of the capillary filling pen approach the tapered lower terminus of the pen receiving receptacle.

- 5 6. A desk set comprising an integrally formed container and base structure, said container including a downwardly extending portion and an upwardly projecting portion with an integrally formed ink bottle supporting portion intermediate said portions, an inverted ink bottle hav-
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ing the peripheral portion thereof supported by said ink bottle supporting portion and adapted to be substantially surrounded by the side walls of said upwardly projecting portion, a pen guide and support formed integrally with said container and opening into said container below the position of support of said bottle for transferring ink from the base of said container to the pen guide and support.

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