April 5, 1938. C. G. GREGORY 2,112,907

DESK SET

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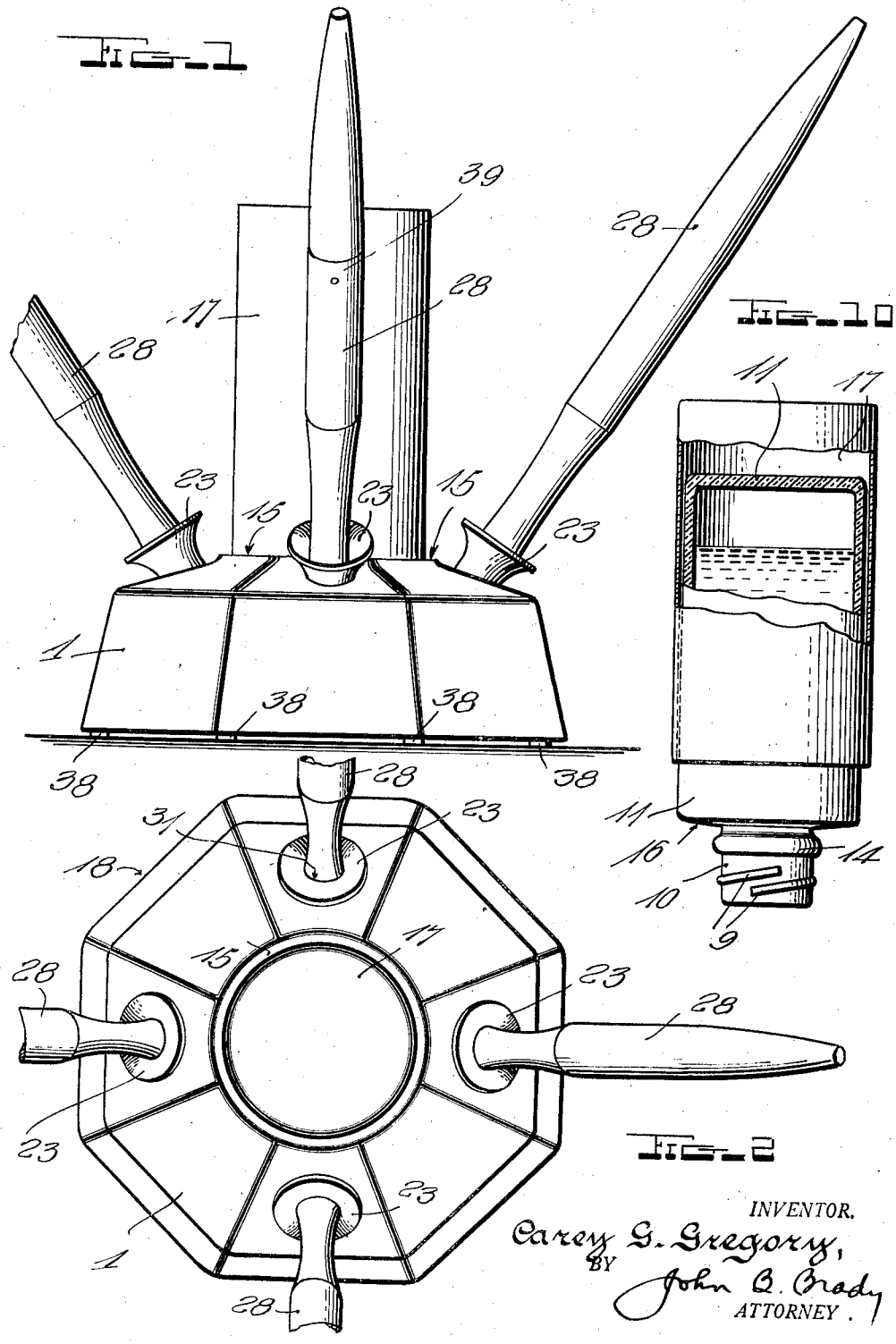


FIG. 1

FIG. 1a

FIG. 2

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FIG. 3

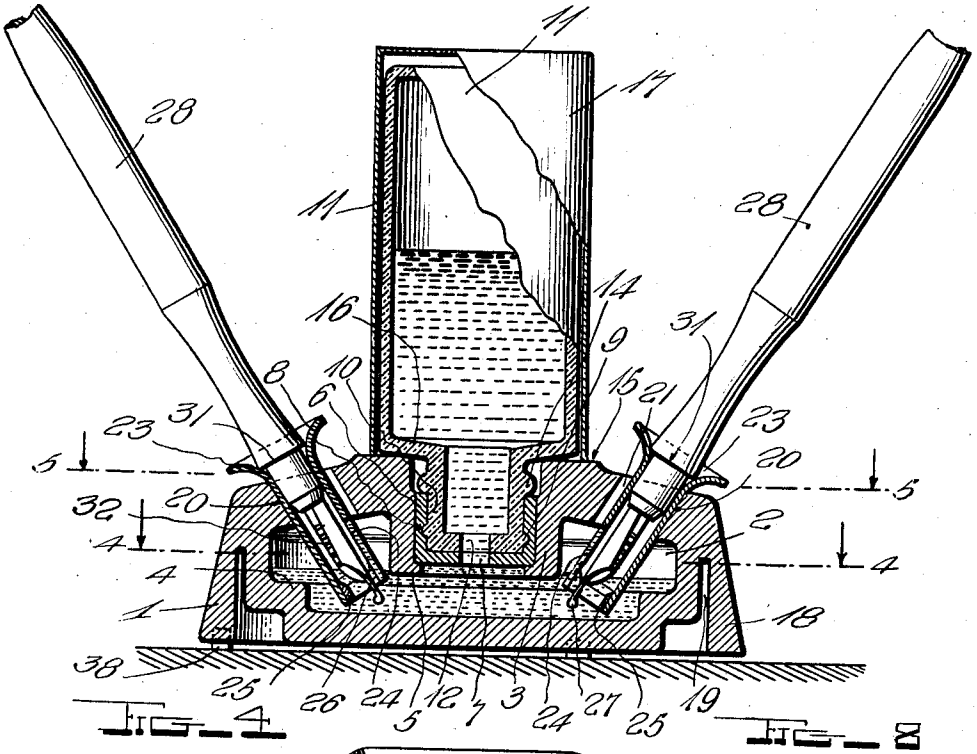


FIG. 4

FIG. 8

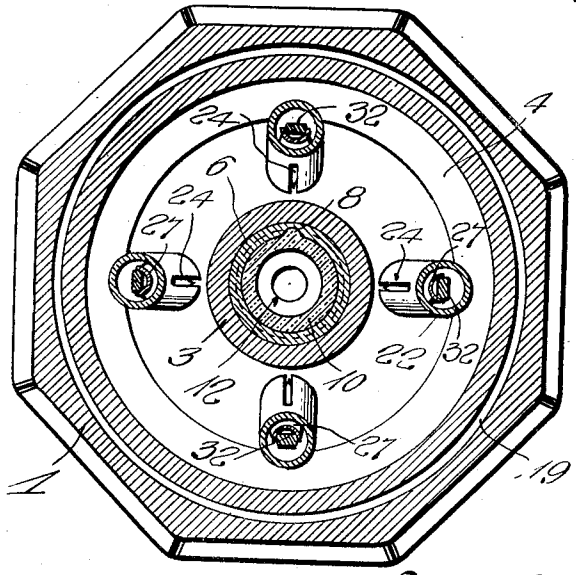
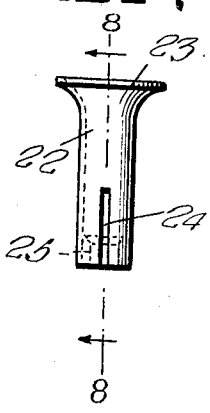


FIG. 7



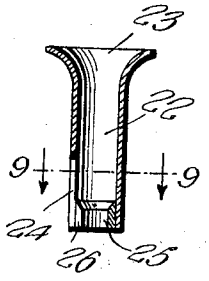
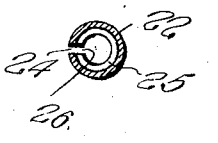


FIG. 9



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DESK SET

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FIG. 5

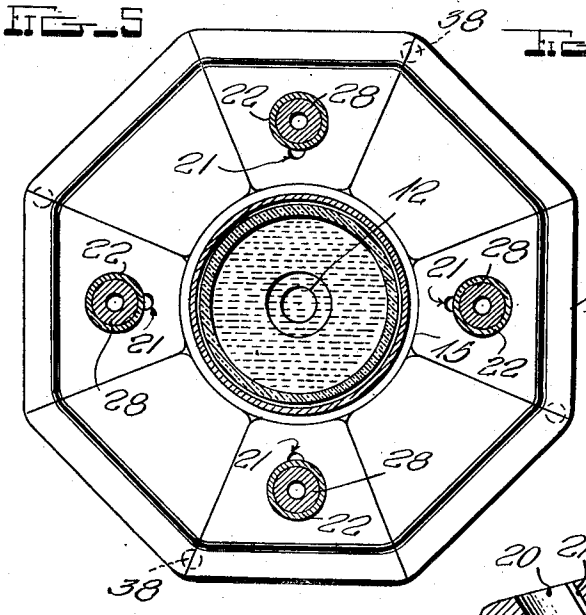
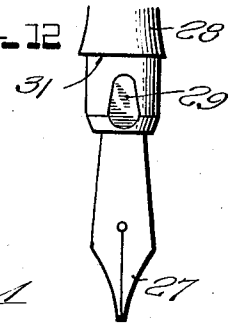


FIG. 12



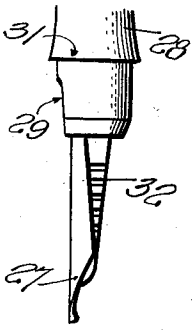


FIG. 13

FIG. 6

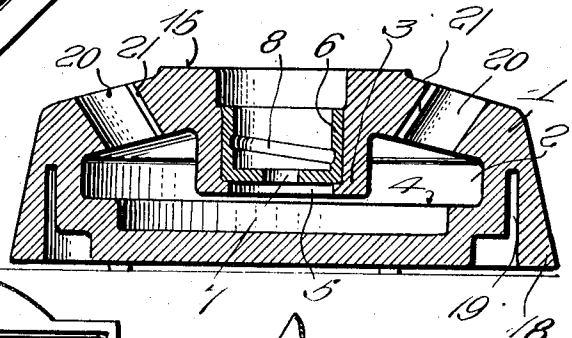
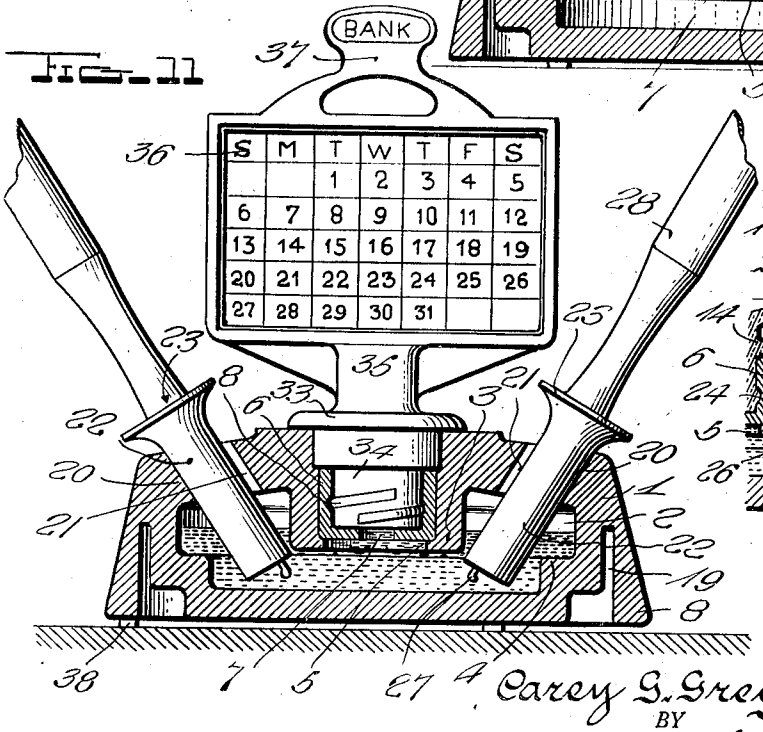


FIG. 11



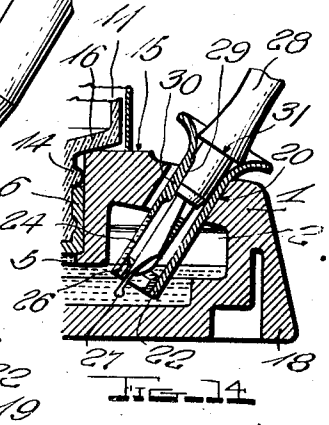


FIG. 14

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UNITED STATES PATENT OFFICE

2,112,907

DESK SET

Carey G. Gregory, Los Angeles, Calif.

Application December 6, 1935, Serial No. 53,240

7 Claims. (Cl. 120—59)

My invention relates broadly to desk sets and more particularly to a construction of ink well and arrangement of dip pen for coaction therewith in a manner by which the desk set is at all times sealed against air for eliminating oxidation and evaporation, thereby eliminating the deleterious effects of dust and dirt on the desk set.

One of the objects of my invention is to provide a construction of desk set having means for insuring the constant feeding of ink to a fount in which a dip pen is adapted to be immersed in combination with means for insuring a substantial seal against the ingress of dust for eliminating deleterious effects of dirt upon the writing desk set over long periods of time.

Another object of my invention is to provide means for insuring a proper hydrostatic pressure within an ink well for insuring the adequate supply of ink to a dip pen over long periods of use.

Still another object of my invention is to provide a simplified method of constructing a hydrostatic pressure type of ink well by which the number of parts may be reduced and the production of the desk set greatly simplified.

A further object of my invention is to provide a construction of a hydrostatic ink well which will accommodate a multiple number of dip pens and insure the adequate supply of ink to the dip pens by the continuous regulation of the hydrostatic pressure within the ink well.

A still further object of my invention is to provide a construction of funnel shaped guide for an ink well of the hydrostatic pressure type adapted to coact with a structure of dip pen in a manner insuring the protection of the pen point.

Another object of my invention is to provide a construction of hydrostatic pressure type of ink well having a funnel shaped guide therein for receiving a dip pen having means coacting with the funnel shaped guide for insuring the insertion of the pen in a position which serves to seal the ink well against the ingress of dust particles when the dip pen is not in use.

Still another object of my invention is to provide a construction of desk set including a hydrostatic pressure type of ink well which may be readily molded from synthetic material such as porcelain for wholly enclosing an ink reservoir into which fixtures serving as guides for dip pens may be readily mounted with air ports adjacent each of the fixtures and extending into the reservoir within the base for insuring equalization of pressure in the ink well.

Other and further objects of my invention will be understood from the specification hereinafter following by reference to the accompanying drawings, in which:

Figure 1 is a side elevational view of the desk set of my invention showing a multiplicity of pens in position therein; Fig. 2 is a plan view of the desk set shown in Fig. 1; Fig. 3 is a vertical sectional view through the desk set with parts of the desk set and pens illustrated in elevation; Fig. 4 is a horizontal sectional view taken on line 4—4 of Fig. 3; Fig. 5 is a horizontal sectional view taken on line 5—5 of Fig. 3; Fig. 6 is a cross-sectional view through the base of the desk set with the pen guides and the ink reservoir removed; Fig. 7 is a side elevational view of one of the pen guides; Fig. 8 is a longitudinal sectional view taken through the pen guide of Fig. 7 on line 8—8 thereof; Fig. 9 is a horizontal sectional view taken through the pen guide on line 9—9 of Fig. 8; Fig. 10 is a side elevational view partially broken away and shown in cross-section illustrating the manner in which the exterior casing fits over the ink reservoir which connects with the base of the desk set; Fig. 11 is a cross-sectional view through the desk set illustrating the pen guides and the pens in side elevation and showing a calendar device arranged interchangeably with the ink reservoir of the desk set; Fig. 12 is a front elevational view of a fragmentary portion of a modified form of pen holder used in the desk set of my invention; Fig. 13 is a side elevational view of the pen holder illustrated in Fig. 12; and Fig. 14 is a fragmentary view of the desk set showing the manner in which the pen holder serves as a seal against the ingress of dust into the ink well and showing the means by which the correct insertion of the pen into the pen guide for establishing a proper seal is assured.

My invention relates generally to that class of desk sets illustrated in my copending application Serial No. 728,026, filed May 28, 1934, for Combined ink well and bottle, which issued as Patent 2,026,529, on January 7, 1936. However, the desk set of my present invention is a substantial improvement over the desk set set forth in my aforesaid application inasmuch as in my present construction, I provide a base capable of being molded from porcelain or synthetic products in a single unit which greatly simplifies manufacture and reduces the cost thereof at the same time providing a unit capable of efficient use over a relatively long period of time. The desk set of my invention comprises a molded base of ceramic material and

having an ink well within the base with means for hydrostatically feeding ink to the ink well and means for securing a dip pen or a multiple number of dip pens in the ink well ready for convenient use in writing. The guide devices which serve to support the pens in position in the ink well are molded of a suitable composition material, such as a phenol condensation product and are each provided with an air leakage port adjacent the guide by which hydrostatic pressure may be automatically regulated within the ink well. The structure of the pen or pens is such that a substantial seal against the ingress of dust into the ink well may be provided during all times that the pen or pens are not in use. The ink reservoir which may be centrally secured to the base of the desk set of my invention is interchangeable with a calendar or ornamental unit. Special means are provided for protecting the writing points of the dip pens when the pens are not in use. The desk set of my invention comprises a minimum number of parts and may be manufactured inexpensively on a quantity production basis.

Referring to the drawings in detail, reference character 1 designates the molded base for the desk set of my invention. The base may be molded in various shapes and sizes and the octagon shape of base shown is intended for illustrative purposes only. The base 1 is molded with a hollow interior portion 2 forming a receptacle for ink into which the central cylindrical portion 3 depends. The central cylindrical portion 3 extends well into the receptacle portion 2 which receives the ink and terminates slightly above the plane of the annular shoulder 4 within the ink receptacle 2. The lower end of the cylindrical portion 3 has its interior wall directed inwardly as indicated at 5 to provide a shoulder which serves as a support for an interiorly screw-threaded insert or bushing member 6 molded of a suitable composition material such as a phenol condensation product. The insert or bushing member 6 is substantially cup-shaped and centrally apertured at 7. The insert or cup-shaped member is peripherally supported by the inwardly directed portion 5 of the interior wall of the cylindrical depending portion 3. The insert or cup-shaped member 6 is provided with interiorly formed screw threads indicated at 8 which are adapted to receive coacting screw threads 9 formed on the cylindrical neck 10 of the ink bottle 11, which is usually of glass. The ink bottle 11 has the cylindrical neck 10 thereof apertured at 12 in such manner that the aperture 12 in the end of the neck of the bottle registers with the aperture 7 in the bushing 6 for allowing the free flow of ink into the ink receptacle 2. The ink bottle 11 has an annular shoulder 14 formed thereon providing an abutment with the upper end of the insert or bushing 6 for insuring a substantial support for the ink bottle 11. The base 1 is provided with a flat annular top portion 15 against which the top wall of the ink bottle 11 indicated at 16 is adapted to abut when the ink bottle is secured firmly in position with respect to the base 1. When secured in position, the bottle 11 is ready to receive the ornamental cylindrical cover 17. The cylindrical cover 17 may be provided with any desired insignia or advertising matter and serves to substantially improve the esthetic appearance of the desk set. The general contour of the base 1 is made to conform with the generally ornamental character of the cylindrical cover 17 by the provision of the outwardly flared skirt 18 on the base. The skirt 18 is substantially octagonal in shape and is positively spaced from the cylindrical portion of the base indicated at 19 which provides the central ink retaining reservoir 2. The top of the base 1 is provided with one or more apertures disposed at an acute angle with respect to a vertical line drawn through the base and serving to receive pen guides therein. I have shown the apertures in the top of base 1 more clearly in Fig. 6 by reference character 20. It will be observed that each aperture is provided with a parallel extending groove 21 on the side of the aperture immediately adjacent the center of the base. The pen guide comprises a cylindrical member 22 shown more particularly in Figs. 7, 8 and 9 having a substantially frusto-conical or funnel-shaped top portion 23 and a lower end portion slotted as indicated at 24. I provide a slotted ferrule or substantially ring-shaped member 25 located in the end of cylindrical member 22 and having a slot 26 which coacts with slot 24 in cylindrical member 22 to allow free ingress of ink from receptacle 2 to a position in which the pen point 27 of the dip pen 28 may be freely supplied with ink. The slots 26 and 24 are aligned in such manner that they provide means for retaining ink by capillary attraction to insure the transfer of ink to the point of the dip pen as the pen is removed from the cylindrical member 22.

In a modified form of my invention, I provide means for insuring the insertion of the pen in the pen guide in a position which will seal the ink well and at the same time protect the pen point 27 against injury. For this purpose I provide a shaped area 29 near the end of the pen holder which is adapted to coact, as illustrated in Fig. 14, with a shaped interior wall 30 of the cylindrical member 22 so that in order to insert the pen holder 28 into the cylindrical member 22, the shaped area 29 adjacent the end of the pen holder must be aligned with the shaped area 30 within the cylindrical member 22. This shaped area 30 is an integral projection on the interior of the cylindrical member 22 which conforms with the shaped end of the pen holder. When proper alignment of the pen holder with the cylindrical member 22 is accomplished, the pen holder 28 may be inserted to the full limit allowed by the annular peripheral shoulder 31 which abuts against the frusto-conical or funnel-shaped end portion 23 of the cylindrical member 22. The circular seal between the shoulder 31 and the funnel-shaped end 23 of cylindrical member 22 insures against the ingress of dust tending to impair the operation of the desk set. Ink is retained in the dip pen by suitable feed means indicated generally at 32. In order to provide for the hydrostatic control of the level of ink in the ink well 2, the breather apertures 21 operate to allow atmospheric pressure to enter the ink well and to be rendered effective against the surface of the ink in the ink well 2. It will be observed that I so locate the breather apertures 21 that they are substantially covered so far as the seepage of dust particles may be concerned by the outwardly flared ends 23 of the cylindrical members 22. There is minimum tendency for the breather apertures 21 to become clogged by reason of the angular disposition of the breather apertures at an acute angle to a vertical axis passing through the base.

In lieu of the continuous supply of ink from an ink bottle as represented in Figs. 1–5, I may

remove the central ink bottle and in lieu thereof mount a plug as illustrated in Fig. 11 at 33. The plug 33 carries a depending screw-threaded portion 34 adapted to engage the interior screw threads 8 in the insert 6. The plug 33 has an upwardly extending portion 35 adapted to support a changeable calendar shown generally at 36 having a suitable ornamental or advertising device 37 connected therewith. The plug 33 provides a seal with the top portion 15 of the base 1. Ink may be supplied to the receptacle 2 by removing the plug 33 and the central aperture thereafter closed by restoring the plug to the position shown. I may fill the ink receptacle without removing the plug 33 by filling the receptacle through one of the cylindrical guide members 22 by pouring the ink through the funnel-shaped upper portion 23 of the cylindrical guide.

Provision for mounting any reasonable number of pens may be readily made by properly spacing the cylindrical members 22 about the base 1.

The base 1 may be supported in any suitable surface by providing silencing foot members 38 suitably secured beneath the surface of the base 1.

In the operation of the desk set of my invention, the ink bottle is screwed firmly in position with the stand placed flat on the desk. The ink assumes a level in the receptacle 2 dependent upon the reduced pressure in the area above the surface of the ink in ink bottle 11 as compared to the pressure of the atmosphere which is exerted against the surface of the ink within receptacle 2 by virtue of the pressure of the atmosphere entering through the apertures 21 regardless of whether one or more pens are in sealing position or not. As the pens are withdrawn and returned to the stand after use, care should be taken to so return the pens to the stand that a substantial seal as hereinbefore described is effected for each pen holder and the cylindrical member which serves as a support and guide for the pens.

Each of the pen holders has a small hole 39 in the barrel thereof to allow expanding air to escape when the dip pen is in use. Normal heat from the hand causes the air expansion in the barrel. Without the central bore or hole in the barrel of the pen holder 28, the expanding air would have a tendency of causing ink to be forced from the pen point thereby resulting in a blot on the writing.

In order to provide for operation under various conditions and the expansion of air under conditions of increased temperature, the receptacle 2 is offset by means of the shoulder 4 as illustrated in Figs. 3, 4, 6, 11 and 14 which allows for operation of the desk set under conditions in which the air over the surface of the ink in receptacle 2 may be expanding.

I have found the desk set of my invention highly practical in its construction, simple in manufacture, and convenient in its use, and, while I have described my invention in one of its preferred embodiments, I desire that it be understood that modifications may be made and that no limitations upon my invention are intended other than are 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 a molded base of ceramic material and having a receptacle for ink disposed interiorly thereof, said base having a central recess therein, a sleeve member of molded composition material and extending into said recess, an ink reservoir of ceramic material and having a screw threaded terminus engageable within said sleeve member, an annular bead on the terminus of said reservoir adapted to abut with the upper peripheral edge of said sleeve for confining all stresses to said sleeve and the terminus of said reservoir in maintaining said reservoir in position, and a pen guide of molded composition material and projecting through the top of said base and into said receptacle for supporting a writing pen in ink receiving position with respect to said base.

2. A desk set comprising a molded base having an ink receiving receptacle disposed interiorly thereof, a reservoir for supplying ink to said receptacle connected with said molded base, a plurality of pen guides extending through the top of said molded base and directed at acute angles extending toward each other with respect to a vertical axis through said base and terminating in a position normally submerged below the surface of the ink in said ink receiving receptacle, said pen guides being adapted to receive pen holders operating to substantially plug the said pen guides for preventing the ingress of foreign matter into the ink well, said base having a plurality of apertures for said pen guides, and said apertures having non-conforming portions for venting said ink receiving receptacle, the plurality of venting portions cooperating to maintain atmospheric pressure within said receptacle.

3. A desk set comprising a molded base, a receptacle for ink disposed within said base, a pen guide extending through the top of said base and into said receptacle, a pen holder having a pen point adapted to be projected into said pen guide, said pen guide being provided with a capillary slot for ink on the upper side thereof, and a ferrule opened at one side disposed on the interior wall at the lower extremity of said pen guide, with the open side of said ferrule registering with the capillary slot in said guide, said ferrule being shaped to guide the point of the pen to a position coaxial with said guide and in alignment with the capillary slot in said guide.

4. In a desk set, a molded base, a receptacle for ink within said base, a cylindrical pen guide extending through the top in said molded base and terminating below the normal surface of the ink within said receptacle, said guide having a preformed interior wall including a flat portion, a pen holder carrying a pen point projectible through said pen guide to an ink receiving position within said receptacle, said pen holder being preformed to correspond with the preformed shape of said pen guide and including a flat portion to cooperate with the said flat portion of said guide, whereby said pen holder operates as a seal to plug said pen guide when said pen holder is inserted in a position in which the complementary parts of said pen holder and said pen guide interengage one with the other.

5. A desk set comprising a molded base of ceramic material and having a receptacle for ink disposed interiorly thereof and a central recess therein, a sleeve member extending into said recess and constructed to establish a force fit connection therewith, an ink reservoir of ceramic material having a screw threaded terminus engageable within said sleeve member, and an annular bead on the terminus of said reservoir adapted to abut with the upper peripheral edge of said sleeve for confining all stresses to said

sleeve and the terminus of said reservoir in maintaining said reservoir in position.

6. In a desk set, a molded base having a receptacle for ink therein, and a pen guide; said base being apertured to receive said pen guide, with the wall of the aperture being recessed in a portion thereof from the outer to the inner surface of said base, the recessed portion of said wall and said pen guide forming an air duct for venting the receptacle for ink in said base.

7. In a desk set, a molded base having a receptacle for ink therein, and a pen guide; said base being apertured at an acute angle to receive said pen guide, with the upper wall of the aperture being recessed from the outer to the inner surface of said base, the recessed portion of said wall and the upper portion of said pen guide forming an air duct, above said pen guide, for venting the receptacle for ink in said base.

CAREY G. GREGORY.