April 4, 1950 R. GRUEN 2,503,043

PEN DESK SET

Filed Dec. 6, 1945 2 Sheets-Sheet 1

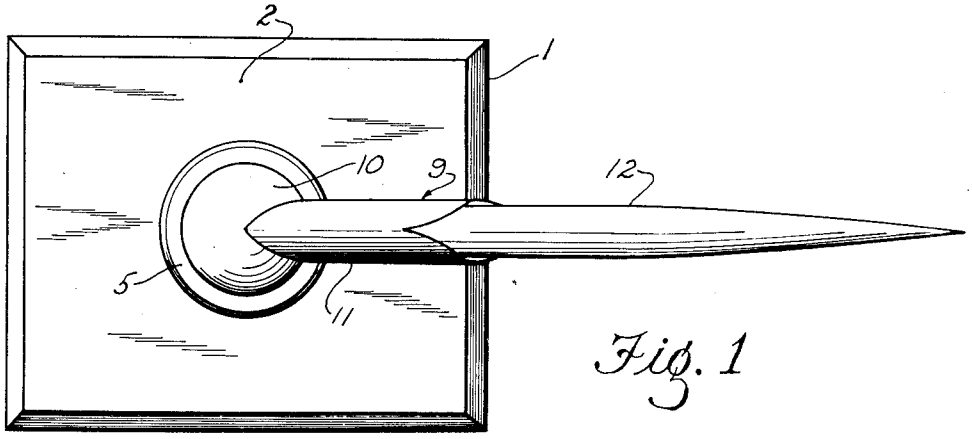


Fig. 1

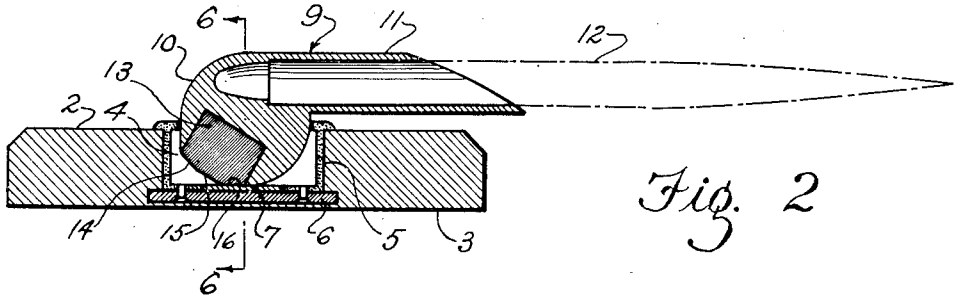


Fig. 2

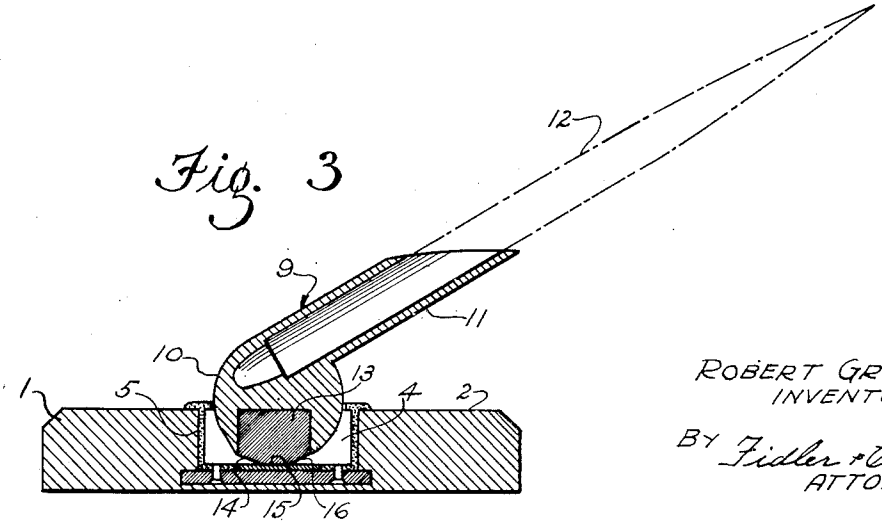


Fig. 3

ROBERT GRUEN
INVENTOR

BY Fidler & Crouse
ATTORNEYS

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Filed Dec. 6, 1945 2 Sheets-Sheet 2

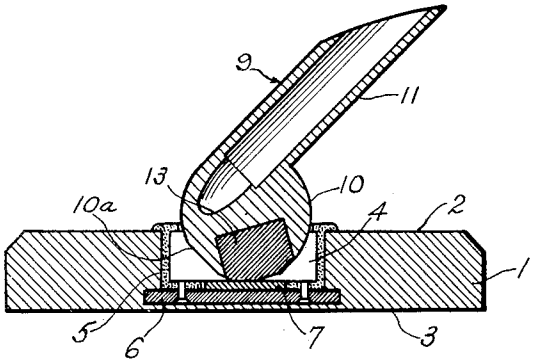


Fig. 4

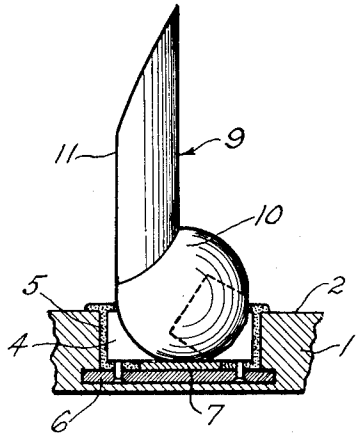


Fig. 5

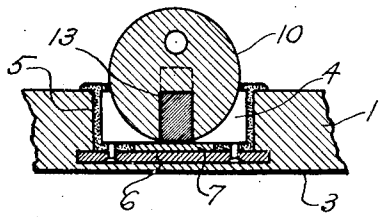


Fig. 6

ROBERT GRUEN
INVENTOR

BY Fidler & Crouse
ATTORNEYS

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UNITED STATES PATENT OFFICE

2,503,043

PEN DESK SET

Robert Gruen, New York, N. Y., assignor to The Parker Pen Company, Janesville, Wis., a corporation of Wisconsin

Application December 6, 1945, Serial No. 633,108

3 Claims. (Cl. 120—108)

1

The invention relates to pen desk sets of the ball-and-socket type wherein the pen receptacle is magnetically secured to the base for angular and rotational movements relative thereto.

One of the objects of my invention is to provide an improved desk set of the foregoing character and which is of a construction well adapted to the effectuation of attractive desk set designs.

Another object is to provide a construction of marked simplicity wherein the pen receptacle can be adjusted selectively to assume any one of several vertical angles while being at the same time rotatable in the horizontal plane, and wherein the braking action required to maintain the pen receptacle in any selected position is effected by magnetic attraction, thereby avoiding all need for spring-actuated friction means.

A further object is to provide a magnetic ball-and-socket type desk set which is inexpensive to manufacture and yet of durable construction and devoid of mechanical complexity, while being at the same time of compact and attractive design.

The novel features of my invention will be pointed out hereinafter in conjunction with the detailed description of the preferred embodiment thereof shown in the accompanying drawing wherein:

Fig. 1 is a plan view of a magnetic desk set;

Fig. 2 is a sectional view taken along line 2—2 of Fig. 1 and showing the pen receptacle in the horizontal position, the pen itself being indicated in dot-dash lines;

Fig. 3 is a sectional view similar to Fig. 2, except that the pen receptacle is shown tilted at an angle of 30 degrees to the horizontal;

Fig. 4 is a view similar to Figs. 2 and 3 except that the pen receptacle is shown tilted at an angle of 45 degrees to the horizontal;

Fig. 5 is a view similar to Fig. 2 except that the pen receptacle is shown in its vertical position; and

Fig. 6 is a cross-sectional view taken along line 6—6 of Fig. 2

The desk set illustrated comprises a base 1 having a top surface 2 and a bottom surface 3 on which it rests. Formed in the base is a well 4 defined by a casing 5 which is closed at the bottom by means of a metal plate 6 to the top of which is secured a plate 7 of paramagnetic material. Plate 6 may also be of paramagnetic material and plate 7 may be secured thereto by spot welding or in any other convenient way. Parts 5 and 6 are secured together by means of rivets 8.

The desk set further includes a unit 9 com-

2

prising a ball-like member 10 and a pen-receiving receptacle 11. The ball and receptacle are preferably of one piece and may be made of a suitable plastic. The pen receptacle is adapted to receive a pen 12.

Securely embedded in ball 10 is a permanent magnet 13 having three flat pole faces 14, 15 and 16 disposed at different angles with respect to the pen receptacle and arranged to be moved selectively, one at a time, into vis-a-vis relation to the top surface of plate 7 by rotating ball 10. By reason of the fact that said pole faces are permanently magnetized they will each adhere to plate 7 when brought into contact therewith, and the adhesion is of such strength as to hold ball 10 against rotation under the combined leverage of receptacle 11 and pen 12; but said ball can easily be rotated manually so as to break the magnetic adhesion between any one pole face and the top of plate 7 and to bring another of said pole faces into vis-a-vis relation with said plate. With three pole faces, as shown, unit 9 is adjustable into three stable positions as depicted in Figs. 2, 3 and 4, respectively. In Fig. 2 the unit is shown so adjusted that pole face 16 engaged plate 7 to position the pen receptacle horizontally and substantially parallel with the top of base 1. In Fig. 3, unit 9 is shown so positioned that pole face 15 engages plate 7 thereby positioning the pen receptacle at an angle of approximately 30° relative to the base. In Fig. 4, unit 9 is shown so positioned that pole face 14 engages plate 7 thereby holding the pen receptacle at an angle of approximately 45°. In Fig. 5, unit 9 is shown with the pen receptacle in the vertical position wherein none of the pole faces engages plate 7. When so positioned, unit 9 can be withdrawn from the well with little or no resistance due to magnetic attraction. Ball 10 may be flattened at 10a (Fig. 4) to provide a footing when the pen receptacle is in its vertical position.

Ball 10, together with receptacle 11, can be rotated not only in the vertical plane as above described but can also be rotated in the horizontal plane, thus enabling the pen receptacle to project in any direction horizontally while being disposed at any one of the three predetermined vertical angles.

Manifestly magnet 13 may, if desired, have a larger or smaller number of pole faces in keeping with the number of vertical angles to which it may be desired to adjust the pen receptacle.

While I have described what I consider to be the preferred embodiment of my invention it

should be understood that there are many possible modifications thereto and that I do not wish to be limited except as indicated by the scope of the appended claims.

I claim:

1. In a pen desk set, a base having a well opening at the top surface of said base, a pen receptacle including an elongated body having a socket therein closed at one end and open at the other end for receiving and enclosing the end of a pen and having a portion formed substantially as a ball adjacent the closed end of said socket, said ball being adapted to enter said well through said opening, said opening being dimensioned to confine said ball laterally, a paramagnetic member in said well, and a permanent magnet carried by said ball, said permanent magnet having a plurality of flat pole faces each of which, in turn, may be brought into vis-a-vis relation to said paramagnetic member by rotating said ball in said well, said pole faces being disposed in angular relation whereby said pen receptacle is retained in any one of a plurality of predetermined vertical angular positions to which said receptacle is adjusted corresponding respectively to the positions of said pole faces in vis-a-vis relation to said paramagnetic member.

2. In a pen desk set, a base having a well, said well opening at the top surface of said base, a unit comprising a ball and an elongate pen-receiving receptacle projecting from said ball and having a closed-end socket for receiving and enclosing the end of a pen, said ball being adapted to enter said well through said opening and to rest on the bottom of said well, the effective depth of said well being such that part of said ball is disposed above the top surface of said base and part is situated below said top surface, a paramagnetic member secured in said well, and a permanent magnet embedded in said ball and having a plurality of exposed flat pole faces each of which, in turn, may be brought into vis-a-vis relation to said paramagnetic member by rotating said ball, said pole faces being disposed in such angular relation to each other and to said pen receptacle that when any one of said pole faces is in vis-a-vis relation to said paramagnetic member said pen receptacle is positioned at a predetermined vertical angle with respect to said top surface, which predetermined angle is individual to that particular pole face.

3. In a pen desk set, a base having a well opening at the top surface of said base, a unit comprising a ball and a pen-receiving receptacle projecting from said ball and supported thereby, said ball being adapted to enter said well through its top opening and to rest on the bottom of said well, the effective depth of said well being such that a substantial portion of said ball is disposed below said top surface while the remaining portion of said ball is disposed above said top surface, said top opening being dimensioned to substantially confine said ball laterally while permitting rotation thereof, a permanent magnet embedded in said ball and terminating substantially at the peripheral surface thereof in a plurality of flat magnetic pole faces arranged to be brought, one at a time only, into vis-a-vis relation with the bottom of said well by rotating said ball, the orientation of said pen receptacle with respect to said pole faces being such that said pen receptacle can be adjusted selectively to stand at any one of a plurality of predetermined vertical angular postures with respect to said top surface by rotating said ball to bring a corresponding one of said pole faces selectively and individually into vis-a-vis relation to the bottom of said well, and an element of paramagnetic material in the bottom of the well to which said pole faces are magnetically adherable respectively when said receptacle is disposed in the corresponding position of adjustment on said base.

ROBERT GRUEN.

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