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MAGNETIC DESK SET

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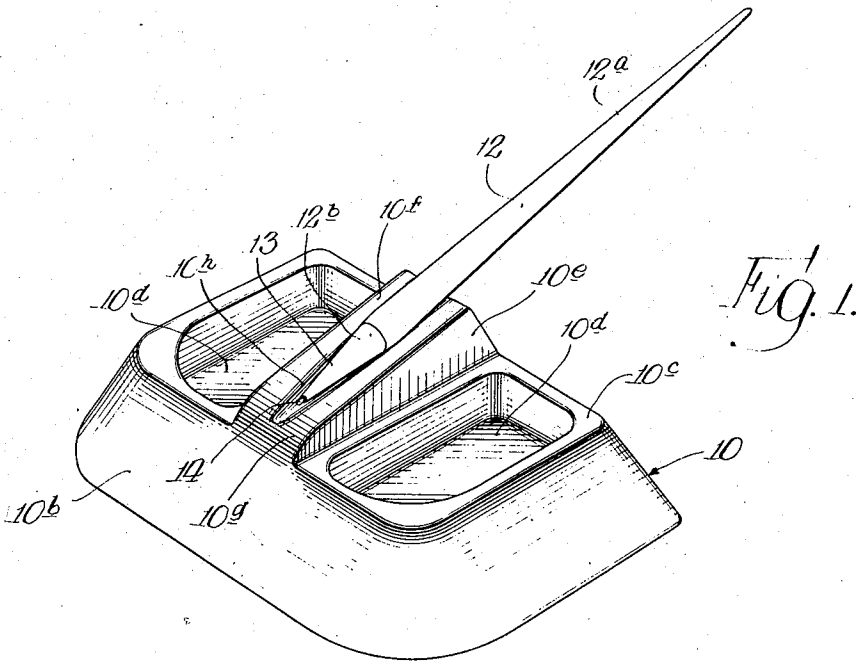


Fig. 1.

Fig. 2.

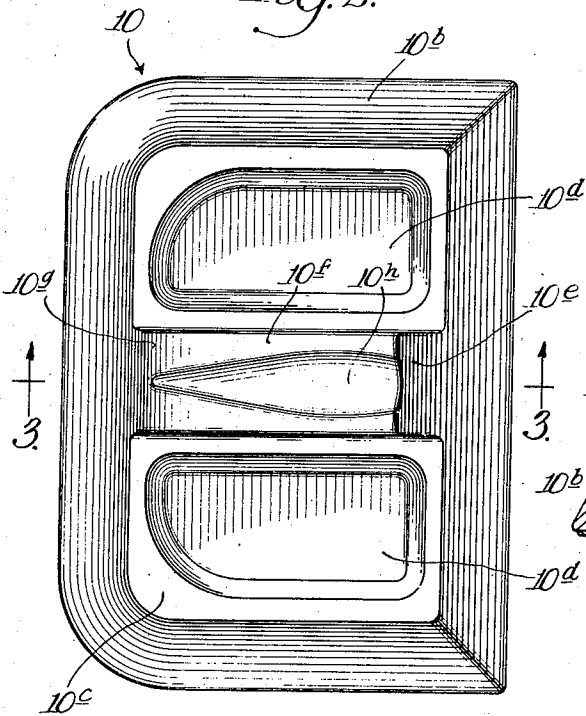
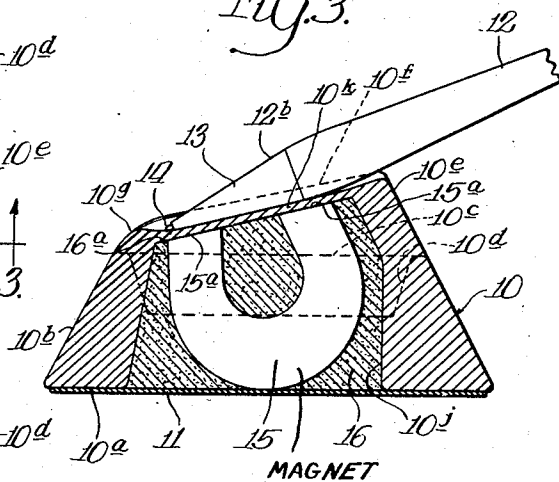


Fig. 3.



MAGNET

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# UNITED STATES PATENT OFFICE

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## MAGNETIC DESK SET

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4 Claims. (Cl. 120—108)

This invention relates to improvements in desk sets adapted for use on a desk to hold a writing instrument in position for use and the purpose of the present invention is to provide a novel device in which a pencil or other writing instrument is held magnetically so that it may readily be removed from or replaced in its normal supported position.

In desk sets of the type heretofore commonly in use, writing instruments have usually been held in place on a supporting base by engagement with a socket or other holding device mounted on the base. These holding devices have required the movement of the instrument along a precise path in moving it into or out of engagement with the part by which it is normally held on the base and all such devices in common use have depended upon gravity or spring pressure to hold the writing instrument in place, so that some attention has been required to remove or replace the writing instrument and it has not always been held securely against accidental removal.

The principal object of the present invention is to overcome the above-mentioned difficulties, and others, by providing an improved desk set in which the writing instrument is held by novel magnetic means in a position to be conveniently engaged by the hand of the user. A further object is to provide a desk set comprising a base having embodied therein a permanent magnet arranged to attract a magnetizable element carried by the writing instrument, the magnet and the magnetizable element having cooperating surfaces adapted to cause the instrument to be supported in a convenient inclined position with respect to the surface which supports the desk set. Another object is to provide a desk set comprising a base, formed preferably of molded insulating material and having embedded therein a permanent magnet arranged with its pole faces at an angle to the horizontal to attract a magnetizable element carried by a writing instrument, which element may preferably be in the form of an annular tapered tip through which the writing point of the instrument projects. Still another object is to provide a desk set comprising a non-metallic base having a depression located over the pole faces of a permanent magnet embedded in the base, the pole faces being positioned at or near the surface of the depression and being adapted to attract a magnetizable element, preferably in the form of an annular tapered tip which fits over and forms a part of a writing instrument. Other objects relate to various fea-

tures of construction and arrangement which will appear more fully hereinafter.

The nature of the invention will be understood from the following specification taken with the accompanying drawing in which one embodiment is illustrated. In the drawing,

Figure 1 shows a perspective view of the improved desk set;

Figure 2 shows a top plan view of the supporting base of the desk set illustrated in Fig. 1; and

Figure 3 is a vertical section taken on the line 3—3 of Fig. 2.

As illustrated in the drawing, the invention comprises a base 10, formed preferably of insulating non-metallic material such as glass, rubber, marble, Bakelite or other molded plastic material, provided with a flat bottom surface 10<sup>a</sup> adapted to be supported upon the surface of a desk or the like and preferably having applied thereto a layer 11 of paper, felt or other material adapted to protect the desk surface. The base 10 is generally rectangular in form and has an outer surface 10<sup>b</sup> which converges upwardly from the bottom of the base with rounded corner portions at the front. The upper surface 10<sup>c</sup> is horizontal and has formed therein two recesses 10<sup>d</sup> which form receptacles for paper clips, rubber bands or other articles. Between the two receptacles 10<sup>d</sup>, the base is provided with an upwardly extending instrument supporting projection 10<sup>e</sup>. The rear wall of this projection is inclined upwardly in the same plane with the rear portion of the outer wall 10<sup>b</sup> of the base and the top surface 10<sup>f</sup> of the projection is inclined downwardly and forwardly toward the front edge of the top wall of the base, terminating in a curved surface 10<sup>g</sup> which merges with the front portion of the inclined outer wall 10<sup>b</sup>. The supporting projection 10<sup>e</sup> is provided with a depression 10<sup>h</sup> in its top surface which is relatively wide at its rear end, as shown in Fig. 2, and which tapers toward a point at its forward end, so that it conforms generally to the shape of the end portion of a pencil or other writing instrument 12 which is adapted to be supported while in engagement with the recess 10<sup>h</sup>, as shown in Figs. 1 and 3. The forward end of the surface of the depression 10<sup>h</sup> may be curved into a horizontal plane or slightly in a reverse upward direction, as shown in Fig. 3, to facilitate the positioning of the writing instrument in the depression. For the same reason the surface of the depression has a curvature transversely of the writing instrument which is somewhat less than that of the surface of the writing instrument.

The writing instrument 12 comprises a tapered

stem portion 12<sup>a</sup> which has its greatest diameter adjacent its lower end. The lower extremity of the stem portion is tapered in the opposite direction to the taper of the upper part, as shown at 12<sup>b</sup>, and has fitted thereover a correspondingly tapered metal tip 13 formed of magnetizable material, such as iron or steel, which may be plated to give it an attractive appearance. This tip portion 13 is in the form of a truncated cone, being open at its lower end to permit the projection of the writing point 14 which may be the lead of a pencil, as illustrated, or the writing point of a pen or the like. The stem portion of the writing instrument 12 is preferably formed of non-metallic insulating material and the part 12<sup>b</sup> is formed to fit the metal tip 13 so that the outer surface of the tip is flush with the adjacent outer annular surface of the part 12<sup>b</sup>.

For the purpose of holding the pencil or other writing instrument 12 in position in the depression 10<sup>h</sup> of the base, the base is provided with a permanent magnet 15 which is of horseshoe shape, as shown in Fig. 3, being embedded in a block 16 which is inserted in a cavity 10<sup>j</sup> formed in the base and extending upwardly from the bottom thereof into the projection 10<sup>e</sup>. After being thus inserted, the block 16 may be held in place by cement or the like or by the subsequent application of the underlying protective sheet 11. The magnet 15 is so positioned that its pole faces 15<sup>a</sup> are exposed in the plane of the upper inclined surface 16<sup>a</sup> of the block 16, which may preferably be formed of molded plastic insulating material of such shape that it closely fits the cavity 10<sup>j</sup> from which it may be removed, if desired, for the purpose of replacing the magnet. The pole faces 15<sup>a</sup> of the magnet lie beneath a thin layer 10<sup>k</sup> of the material of which the base is formed, this layer constituting the bottom wall of the depression 10<sup>h</sup>. The pole faces of the magnet are thus protected from moisture and the like and the layer 10<sup>k</sup> is preferably thin, for example, one thirty-second of an inch ( $\frac{1}{32}$ "') or less, so that the gap between the pole faces and the metallic tip 13 of the pencil will not seriously diminish the attractive force of the magnet upon the metallic portion of the pencil. The metallic tip 13 should preferably be of such length that it bridges the two pole faces when it is seated in the depression 10<sup>h</sup>.

It will be observed that the magnet 15 is so mounted in the removable block 16 that the pole faces 15<sup>a</sup> occupy an inclined plane which extends upwardly and rearwardly from the forward part of the base to correspond with the upward and rearward inclination of the top surface of the supporting projection 10<sup>e</sup> of the base, thus holding the pencil 12 in a convenient and attractive inclined position from which it may readily be removed by the user and to which it may with equal facility be returned. The inclination of the pencil 12 is produced in part by the tapered form of the metallic tip 13 and the inclination of the pole faces 15<sup>a</sup> may be such as to cooperate with the taper of the metal tip to hold the pencil in the desired position.

With this construction, the pencil or other writing instrument 12 is securely held in place on the base 10 when the tip portion 13 is brought into engagement with the recess 10<sup>h</sup>, being retained against accidental removal while permitting its intentional withdrawal by the application of sufficient force when the writer wishes to use it. After use, the pencil or other writing instrument having the magnetizable tip portion may be read-

ily replaced in position on the base without serious attention on the part of the user and without the necessity of great precision in returning the pencil to its position, since the depression 10<sup>h</sup> is so formed as to act as a shallow socket in guiding the lower part of the pencil to a position where the metallic tip 13 will be positioned opposite the pole faces 15<sup>a</sup>. The curvatures of the surfaces of the depression 10<sup>h</sup> will assist in locating the pencil properly on the base but even though the metallic tip is not positioned with precise accuracy over the pole faces the attractive force will be sufficient to hold the pencil securely on the base.

Although one form of the invention has been shown and described by way of illustration, it will be understood that it may be constructed in various other embodiments coming within the scope of the appended claims. The term "pencil," used in the claims, is to be interpreted as including within its scope pens and other writing instruments.

I claim:

1. A desk set adapted to support, in position to be readily grasped, an elongated writing instrument having magnetic material in a relatively short portion of its length, said set comprising a base, and a horseshoe magnet embedded in said base with its pole faces lying in a plane at a small angle to horizontal, said base having a depression shaped generally to conform to the shape of said portion having magnetic material and of substantially the same length as said portion, said depression being positioned to overlie both of said pole faces in alignment therewith and being cross-sectionally rounded whereby the pull of the magnet causes the writing instrument to be cammed into alignment in said depression and said instrument to be moved longitudinally to a position where the magnet exerts its maximum pull on said magnetic material so that the latter acts as a keeper for said magnet.

2. A desk set adapted to support, in position to be readily grasped, an elongated writing instrument having magnetic material in a relatively short portion of its length, said set comprising a base, and a horseshoe magnet mounted in said base with its pole faces upward, said base having a depression shaped to conform generally to said portion having magnetic material and being positioned to overlie both of said pole faces substantially equally and in alignment therewith, the pull of said magnet being adapted, when said writing instrument is placed generally in said depression, to move said instrument laterally into alignment in said depression and longitudinally to a position where the magnetic material overlies said pole faces substantially equally.

3. A desk set adapted to support, in position to be readily grasped, an elongated writing instrument having magnetic material in a relatively short portion of its length, said set comprising a base, and a magnet mounted in said base and having a pair of opposite, spaced, upwardly facing pole faces, said base having a depression shaped to conform generally to the portion of the writing instrument having said magnetic material and extending over said pole faces and the space therebetween, the pull of said magnet being adapted to move the writing instrument into alignment in the depression when placed approximately in such position.

4. A desk set adapted to support, in position to be readily grasped, an elongated writing instrument having magnetic material in a relatively short portion of its length, said set comprising

a base, and a magnet mounted in said base and having a pair of opposite, spaced, upwardly facing pole faces, said base having a depression shaped to conform generally to the portion of the writing instrument having said magnetic material and extending over said pole faces and the space therebetween, the length of said pole faces and the space therebetween being not substan-

tially less than the length of the magnetic material in the writing instrument whereby the pull of the magnet will move said writing instrument longitudinally to a position where the magnetic material overlies said pole faces substantially equally.

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