Nov. 21, 1961 L. SALKA 3,009,382

THUMBTACK HAVING A CONCAVE TOP FACE

Filed Feb. 16, 1959

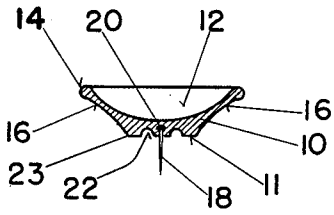


Fig-2

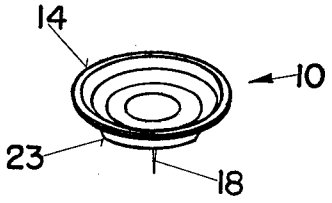


Fig-1

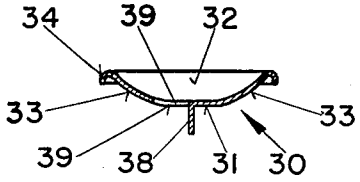


Fig-4

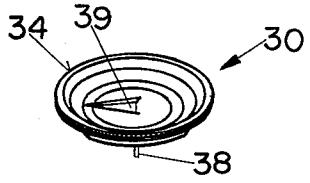


Fig-3

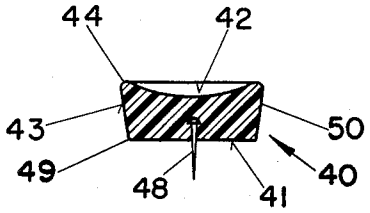


Fig-6

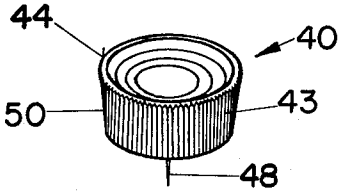


Fig-5

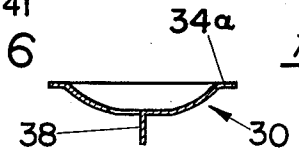


Fig-10

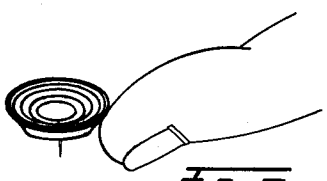


Fig-8

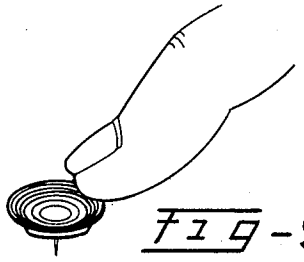


Fig-9

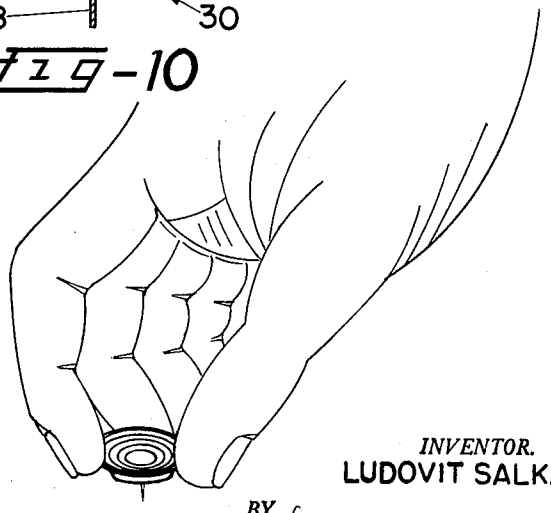


Fig-7

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THUMBTACK HAVING A CONCAVE TOP FACE

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This invention relates to thumb tacks, i.e., tacks of the type having large heads intended to be engaged by the fingers for the purpose of manually applying the tacks to supporting surfaces or removing the tacks therefrom.

In the past various types of thumb tacks have been proposed and produced. One common type, constituted entirely of metal, consists of a generally flat, circular disk-like head formed of sheet metal and having lanced therefrom a prong which extends downward from the center of the under surface of the head, the prong being further worked by a secondary operation so as to have substantially a circular cross section and somewhat of a conical shape.

Another type of thumb tack consists of a wire prong which is imbedded in a metal head of appreciable thickness, the prong being retained in the head by a construction involving a shallow recess in the underside of the head, in which the prong is inserted, and by a swaging operation which causes the material of the head to flow around the prong and around an enlargement on the end of the prong. This arrangement tends to hold the prong quite strongly in a position normal to the plane of the head.

Other tacks, also made in accordance with the above structures, further employ plastic or metal jackets surrounding the head to give it more "body" and facilitate the application and removal of the tacks.

As generally manufactured, thumb tacks of the above types have heads which are generally flat or else slightly rounded on their top or upper surfaces, and have relatively sharp edges or rims, this being for the purpose of enabling the tack to lie flat against the paper or other sheet material which it is to support, so as to not present projecting or obstructing edges to other objects. While this design of thumb tack is effective for such purpose, it results in greater difficulty in not only applying the tack to the supporting surface but also in removing the tack from such surface or structure.

An object of the present invention is to provide a novel and improved thumb tack for use in securing sheets or sheet-like objects to supporting surfaces, which thumb tack may be very easily applied to the supporting structure and may also be very easily removed therefrom.

Another object of the invention is to provide a novel and improved thumb tack as above characterized, wherein an advantageous fulcrum action is made possible in removing the thumb tack from the supporting structure, thereby resulting in much greater ease for such operation, and facilitating generally the removal of the tack.

Yet another object of the invention is to provide a novel, fulcrum-action thumb tack as above set forth, wherein there is provided a raised rim portion having knurling, thereby to further increase the ease of handling and facilitate the use of the tack.

A further object of the invention is to provide an improved thumb tack in accordance with the foregoing, which is extremely simple in its construction and economical to fabricate.

Other features and advantages will hereinafter appear.

In the accompanying drawings:

FIGURE 1 is a perspective view of an improved thumb tack as provided by the invention.

FIG. 2 is an axial sectional view of the thumb tack, with the prong portion or member thereof being shown in elevation.

FIG. 3 is a perspective view of a thumb tack illustrating a modification of the invention.

FIG. 4 is an axial sectional view of the thumb tack of FIG. 3.

FIG. 5 is a perspective view of a thumb tack illustrating yet another embodiment of the invention.

FIG. 6 is an axial sectional view of the thumb tack of FIG. 5.

FIG. 7 is a perspective view of the thumb tack of FIG. 1 being held in the hand, either for application to a supporting structure or removal therefrom.

FIG. 8 is a perspective view illustrating a method of removing the tack, using a fulcrum action.

FIG. 9 is a perspective view also illustrating a method of applying force to the thumb tack to tilt it so as to effect a fulcrum action, for purposes of removal.

FIG. 10 is an axial sectional view similar to that of FIG. 4 but illustrating a modified form.

Referring first to FIGS. 1 and 2, the thumb tack shown therein as embodying the invention comprises a head **10** having a substantially flat, centrally disposed undersurface **11** and having a hollow top surface **12**, the latter being arranged especially for comfortable and effective engagement by the thumb or finger of a user when the thumb tack is being applied to a supporting surface or structure. The hollow top surface **12** is, as shown, continuously concavely curved starting from a central portion of the head and proceeding in any direction to the rim portion **14**.

Surrounding the hollow top surface **12** there is a rim **14**, which is spaced upward from the flat undersurface **11** of the head as shown. The head **10** further has outwardly curved sloping walls **16** extending from the undersurface **11** to the rim **14**. Preferably, as shown, the outwardly sloping walls **16** are suggestive of a frustoconical shape, although such configuration is not limiting and other shapes may be employed within the scope of the invention and without departing from the spirit of the invention.

The thumb tack of FIGS. 1 and 2 further comprises a long, sharp, tapered prong **18** which extends downward from the head **10** and projects from the said flat undersurface **11** thereof. The upper end of the prong **18** has a small enlargement **20**, and the said upper end portion of the prong **18** is imbedded in the head **10**, as shown, as by providing a suitable head-receiving recess therein.

In the embodiment of the invention shown in FIGS. 1 and 2 the head **10** is constituted preferably of metal having appreciable thickness, and when initially formed it is provided with the said shallow recess in its underside at the center thereof, which recess is large enough to receive the large end or enlargement of the prong **18**. After insertion of the prong in the recess, the head of the thumb tack is staked or swaged; that is, the material is caused to flow about the shank of the prong **18**, and about the enlargement **20** thereof, thereby to securely hold the prong **18** captive in the head and rigidly supported in a position normal to the flat undersurface **11** of the head. In FIG. 2 a circular or an annular staking impression **22** is shown, by which the tack head is swaged and the material caused to flow for the above purpose. It will be understood that such swaging operation causes the grain structure of the head to extend in radial directions, thereby providing a ring-like zone about the enlargement of the prong **18**, which zone is dense and strong, securely retaining the prong in its imbedded position. The length of the prong **18** is approximately equal to the overall top-to-bottom dimension of the head **10**, as shown, and the top face **12** of the head has a diameter roughly double that of the undersurface **11**.

By virtue of the above improved construction of thumb tack, several important advantages are had. The provision of the flat undersurface **11** provides a face for engagement with the sheet or sheet-like member which is to be secured in place, whereas the raised, knurled edge **14** of the head, which is spaced upward from the face **11**, facilitates the gripping of the tack when it is to be either applied or removed, as clearly seen in FIGS. 7 and 8. Moreover, the peripheral portion **23** of the flat face **11** constitutes a fulcruming edge in conjunction with the sloping walls **16** and the rim **14**, which results in removal of the tack being much more easily effected by the application of a sidewise pressure, as illustrated in FIG. 8. Or, the removal of the tack may be effected mostly by a simple lifting force, as also indicated in FIG. 8. Or, in carrying out such removal operation the user may apply pressure to a portion of the rim **14** in a downward slanting direction, whereby the adjoining peripheral portion **23** of the flat face **11** will still act as a fulcrum with the result that there is a strong tendency for the prong **18** to become loosened from the supporting structure in which it has been imbedded.

In conjunction with the above action, the provision of the hollow top face **12** provides a more convenient and comfortable surface for engagement by the fingers, especially when the thumb tack is to be applied to a supporting surface or structure, as will be understood. Moreover, the hollow surface **12** tends to centralize the thumb tack on the finger, and to prevent it from slipping off during the operation of applying the tack.

Another embodiment of the invention is illustrated in FIGS. 3 and 4, wherein the entire thumb tack is made from a single piece of sheet metal, in the form of a sheet metal stamping. In the construction shown, the prong is integral with the head of the tack. While the construction of FIGS. 3 and 4 differs from that of FIGS. 1 and 2 in that the entire tack is constituted of integral elements, there are still obtained the advantages and features above explained and enumerated.

In FIGS. 3 and 4 the head **30** has a concave top face **32** and a generally flat undersurface **31**, together with sloping walls **33** which extend angularly upward from the undersurface **31** and terminate in a knurled rim **34**. The rim **34** is made in the form of a downturned flange, as shown, to present a larger surface to the fingers and provide for a better grip as seen in FIG. 7 for example.

The tack has an integral prong **38** which is lanced from the head **30**, leaving a narrow long slot **39**, as will be understood. The prong **38** may be subjected to a secondary operation, to provide it with a circular cross section and a pyramidal configuration. It will be noted that with the construction of FIGS. 3 and 4 there also exists the fulcruming peripheral portion **39** of the undersurface **31**, together with the hollow top surface **32** and the knurled edge **34**, all in conjunction with the flat undersurface **31** whereby the advantages above set forth in connection with the showing of FIGS. 1 and 2 will also be obtained.

Yet another embodiment of the invention is illustrated in FIGS. 5 and 6, wherein there is shown a thumb tack having a head **40** which may be advantageously formed by a molding operation, using plastic or plastic-like substance. In FIGS. 6 and 5 the head **40** is shown as having appreciable thickness, being provided with a concave or hollow top surface **42** and a flat and smaller undersurface **41**, together with outwardly sloping walls **43** having knurling **50** and extending from the flat surface **41** to a knurled rim portion **44**. Imbedded in the head **40** is a prong **48**, as shown, this being effected preferably during the molding operation and forming of the head. However, the head **40** may be molded with a recess in its undersurface, and the prong **48** may be inserted in the recess with a press-fit, and/or it may also be cemented in the said recess.

As with the other embodiments of the invention, the construction of FIGS. 5 and 6 has the advantage of a fulcruming portion **49**, together with the hollow top surface **42** and the flat undersurface **41**. The knurled rim **44** facilitates the grasping of the head, as with the other forms of the invention.

A modification of the structure of FIGS. 3 and 4 is illustrated in FIG. 10, wherein the flange **34***a* is flat and extended radially, to provide a broader or larger top surface and a rim which is higher or further removed from the flat underside **31**.

Variations and modifications may be made within the scope of the claims, and portions of the improvements may be used without others.

I claim:

1. A thumb tack adopted for removal by a fulcrum action comprising a wide, shallow head having a substantially flat, centrally disposed undersurface of relatively large area and a cup-like concave top face constituting a cavity of substantial depth, said top face having a diameter roughly double that of the said undersurface and said head having a rim portion spaced upward from the undersurface and outwardly sloping walls extending from said undersurface to said rim portion; and a sharp and pointed prong extending downward from the head and projecting from the center of the said flat undersurface of the head, said rim portion being provided with knurling to facilitate the gripping thereof and said cup-like top face being continuously concavely curved starting from a central portion of the head and proceeding in any direction to the said rim portion, the length of said prong being approximately equal to the overall top-to-bottom dimension of the said head whereby with the prong imbedded in a supporting surface the thumbtack may be readily removed by a tilting effected by finger pressure under the rim of the head, involving both a direct lifting force and also a lever force wherein a peripheral edge of the undersurface constitutes a fulcrum.

2. The invention as defined in claim 1, in which the rim has an annular recess in its underside, disposed opposite to the cup-like top surface of the head.

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