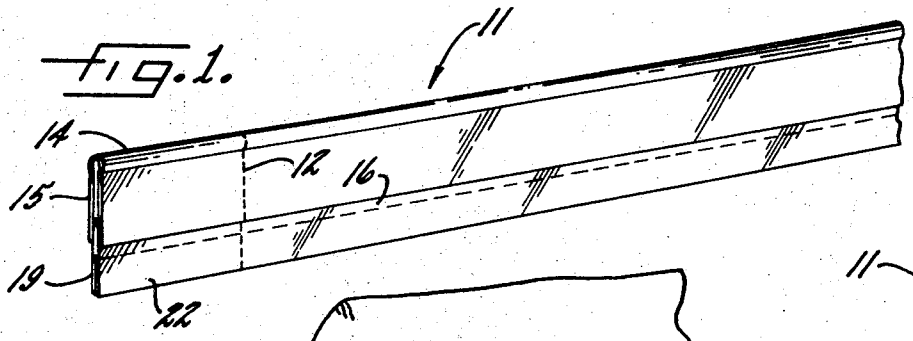
March 2, 1971 T. A. LEACH ET AL 3,566,522

INDEX TABS

Filed Jan. 28, 1969

Fig. 1.



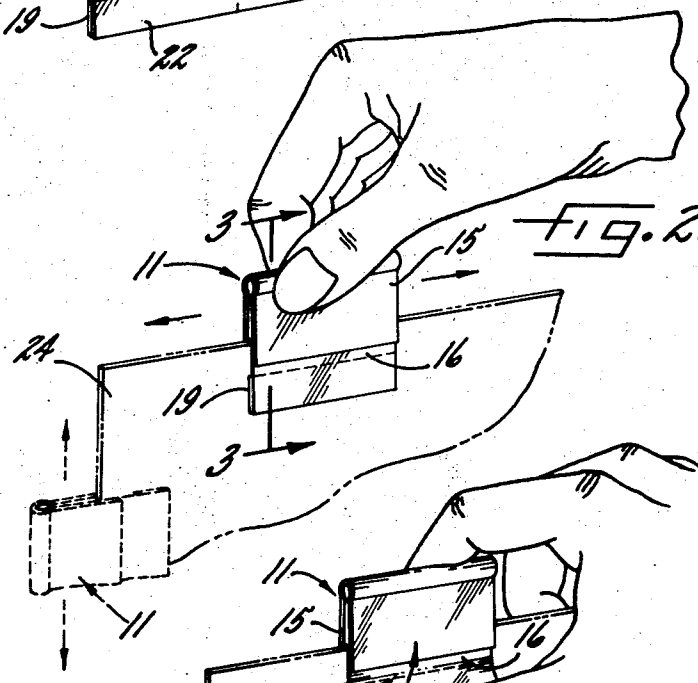


Fig. 2.

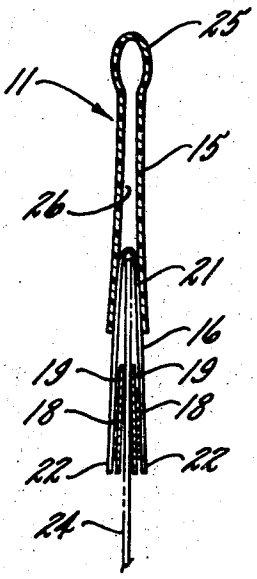


Fig. 3.

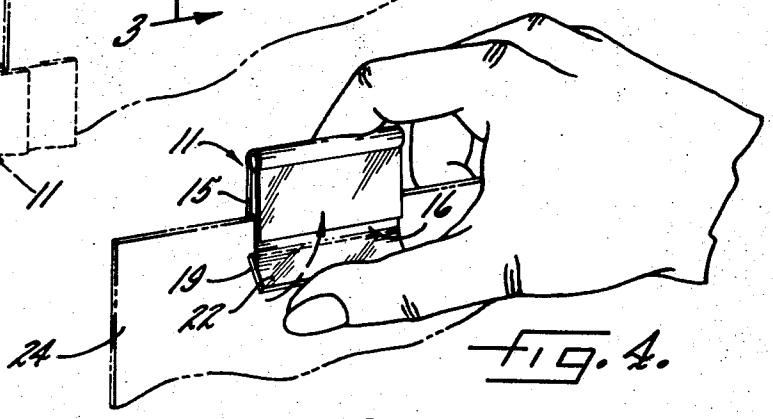


Fig. 4.

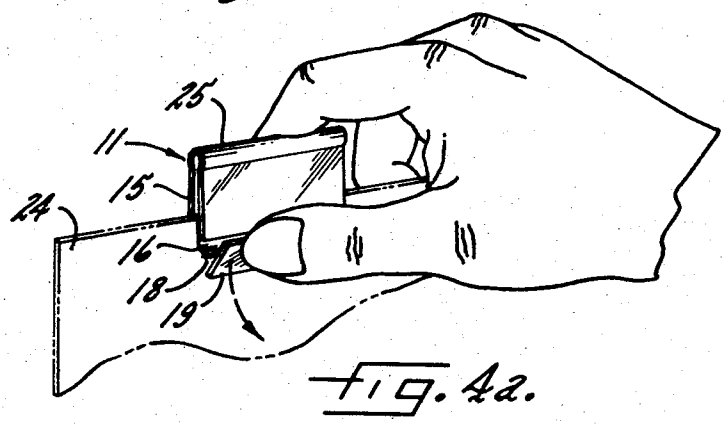


Fig. 4a.

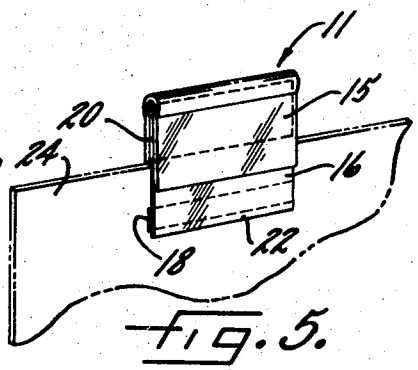


Fig. 5.

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United States Patent Office 3,566,522
Patented Mar. 2, 1971

3,566,522

INDEX TABS

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Filed Jan. 28, 1969, Ser. No. 794,620
Int. Cl. G09f 3/16
U.S. Cl. 40—23 7 Claims

ABSTRACT OF THE DISCLOSURE

An index tab is made of transparent plastic and can be positioned accurately at the edge of a sheet before adhesive of the tab is exposed to the sheet. Conventional use of moisturizing adhesives is eliminated by substituting a pressure sensitive adhesive and cooperating adherent protective strips. The strips are removed after the tab has been located in position.

This invention relates to index tabs, and more particularly to index tabs that can be positioned onto a sheet of paper or the like before any adhesive on the tab is in contact with the paper.

Index tabs are commonly made of a tabbing adapted to receive an informational insert, a skirt bonded to the edge of the tabbing, and an adhesive layer on the inside of the skirt. Usually the tabbing is transparent plastic, the skirt is cloth or similar flexible material, and the adhesive is moisturizable. Although index tabs of this general type are in wide use, they have well recognized limitations.

The fact of the adhesive being moisturizable gives rise to several problems. Since moisture must be applied before the tab is located on the edge of a sheet of paper, it is difficult to locate the tab accurately without premature contact of the paper and adhesive, with consequent misalignment of the tab. Accordingly, a major object of the invention is to provide an index tab which can be positioned on the edge of a sheet of paper or the like before the adhesive is exposed to the paper.

Another disadvantage of existing moisturizable adhesive tabs arises from the inherent lack of sanitation. Common observation shows that most persons applying an index tab will moisten the adhesive with their tongues, either assuming that the adhesive is sanitary or else disregarding the possibility of contamination. A serious health hazard may exist when a clerk re-moistens a tab previously applied by another person which, quite apart from aesthetic objection, may harbor viable micro-organisms. A further object of the invention is to provide an index tab which avoids sanitary difficulties by eliminating the moisturized adhesive.

Further, in many common types of index tabs, the skirt is opaque. As a consequence, the skirt obscures information located near the edge of the sheet. An additional feature of the invention is to provide an index tab having a transparent skirt.

Additional objects of the invention include the provision of a sturdy index tab featuring simple and economic fabrication, easy application and durability in use. Other objects will become apparent as the description of the invention proceeds.

Briefly, in accordance with the invention, there is provided an index tab having an insert-receiving tabbing member formed of a folded sheet of transparent plastic, a flexible skirt member formed of a second folded sheet of transparent plastic and laminated at its folded portion to the inner edge of the tabbing member, pressure sensitive adhesive layers on each of the inner edge portions of the skirt member, and a relatively stiff adherent strip member over each layer of adhesive. Thus, sheathing the edge of a

sheet of paper or the like with an index tab according to the invention permits the tab to be positioned accurately before the adhesive is exposed to the paper, and merely curling the edge portions of the skirt member away from the paper causes the strip members to peel off, thereby presenting freshly exposed adhesive to the paper.

In keeping with the invention, at least the skirt, and preferably both the tabbing and the skirt, are fabricated of polyethylene terephthalate ("Mylar"), the skirt plastic being advantageously from about one to about three mils thick and the tabbing plastic being about three to about five mils thick. Thus, full advantage is taken of the exceptional durability of polyethylene terephthalate, while at the same time there is no inordinate increase in manufacturing or fabrication cost as compared with conventional tabs.

As will appear subsequently, index tabs according to the invention can be fabricated readily in continuous automatic equipment. Thus, not only are the present index tabs superior in many functional respects to heretofore existing tabs, but they may be manufactured readily without elaborate equipment.

While the invention will be described in connection with a preferred embodiment, it will be understood that it is not intended to limit the invention thereto, but rather to cover all modifications and alternative constructions falling within the spirit and scope of the invention as broadly defined. The invention will be further described in conjunction with the appended drawings wherein:

FIG. 1 is a perspective of an index tab according to the invention, showing the tab in an uncut form;

FIG. 2 shows the placement of an index tab according to FIG. 1 saddle-wise on a sheet of paper or the like;

FIG. 3 is an enlarged view taken along 3—3 of FIG. 2, showing an end view of the index tab;

FIG. 4 shows the second step in applying an index tab, namely curling the skirt edges outwardly of the paper;

FIG. 4*a* continues FIG. 4, and illustrates the peeling or rolling-off action of the adherent strip so as to expose the adhesive; and

FIG. 5 depicts the index tab as attached to the sheet of paper.

Turning first to FIG. 1, the index tab **11** is depicted as an elongated stick or strip, which is to be cut to a desired size **14** along a schematic dotted line **12**. (For simplicity, the individual lengths will continue to be referred to as the index tab **11**.)

As best shown in the enlarged end view of FIG. 3, the index tab **11** is best fabricated of several parts, namely an insert-receiving plastic tabbing or tabbing member **15**, a flexible plastic skirt or skirt member **16**, pressure sensitive adhesive layers **18**, and adherent strips or strip members.

The tabbing member **15** is formed of a folded sheet, in strip or web form, of a transparent plastic sheet. Advantageously, the plastic is polyethylene terephthalate, commonly known by the trademark "Mylar," and supplied in various grades by the Du Pont Company. In the embodiment illustrated, the web from which the tabbing **15** is formed is about 1¼ inches wide, 4 mils thick, and is furnished in roll form. This web material is sufficiently thick to provide physical protection for a paper or paper-like insert **20** (see FIG. 5), and to this end is desirably at least about 3 mils thick. Thicknesses in excess of about 5 mils are generally unnecessary and unduly costly.

The tabbing **15** is transparent, and preferably is colorless. It may however be pigmented by the manufacturer of the plastic or of the tab so as to facilitate indexing. Generally however, it will be more convenient to provide a colorless tabbing **15** and, where colored indexing is desired, a colored paper insert **20** (FIG. 5).

The skirt **16** is likewise of a transparent plastic, and again is preferably polyethylene terephthalate. Since it is preferable that the skirt **16** be more flexible than the tabbing **15**, polyethylene terephthalate with its exceptional tensile strength, flexibility, and physical durability is presently the material of choice. In the embodiment shown in FIG. 3, the skirt **16** is folded from a sheet or web of polyethylene terephthalate one inch wide by 1.5 mils thick. Its thickness may, in appropriate circumstances, be as little as about 1 mil or as much as about 3 mils, with the thinner skirts being somewhat more fragile while thicker skirts tending to be somewhat stiffer than is considered optimum for index tabs of this type.

As seen from FIG. 3 and, in perspective in FIG. 1, the index tab has the skirt **16** laminated to the tabbing **15** at the fold portion **21** of the skirt **16**. The respective folds of the tabbing **15** and the skirt **16** are parallel to each other, so that the edge portions **22** extend uniformly from the tabbing member **15**. Thus, as may be seen from FIG. 2, the saddle-wise sheathing of an index tab **11** along the edge of a paper sheet **24** aligns the tabbing **15** parallel to the edge of the paper **24**.

In further keeping with the invention, and with particular reference to FIG. 3, an adhesive layer **18** is on each of the inner extending edge portions **22** of the skirt **16**. These layers **18** extend longitudinally along the edge portions **22**, and preferably terminate just short of the ends **24** of the edge portions **22**. Similarly, the adhesive layer **18** preferably does not extend to the laminated region **21** where the skirt **16** is bonded to the tabbing **15**, for reasons which will be apparent in subsequent discussion.

Covering the facing sides of the adhesive layers **18** is an abherent or strip member **19**, one strip **19** adjacent each adhesive layer **18**. These strips **19** are preferably composed of a paper or paper-like material that is stiffer than the plastic of the skirt **16**, and which is coated with an abherent to facilitate its removal from the pressure sensitive adhesive **18**. A variety of abherents is known (see Kirk and Othmer, "Encyclopedia of Chemical Technology," Second Edition, volume 1, "Abherents," pages 1–11), although the methyl silicone polymers are preferred.

The strips **19** are each about ¼ inch wide, and extend longitudinally of the index tabs **11** (see FIG. 2). Abherent strips **19** precoated with a pressure sensitive adhesive (for adhesive layer **18**) are available commercially in rolled web form, and are coated with two different abherents, one more effective than the other. A pressure sensitive adhesive is coated by the manufacturer on the less effective side of the web. Thus, an adhesive coated abherent web can be rolled up into coil form, and when it is uncoiled the more effective abherent side peels off from the adhesive, leaving the adhesive on the less abherent coated side of the strip.

Pressure sensitive adhesives are likewise well known. (See Kirk and Othmer, cited volume, volume 1, pages 371–405.) These are normally tacky, natural or synthetic materials having a cohesive strength greater than their adhesive strength. The preferred pressure sensitive adhesive is a film forming styrene-butadiene copolymer rubber of a high Mooney value blended with hydrogenated esters of wood rosin and applied from a toluene-heptane solvent system. One such material is "Kleen Stik" high tack D Transfer Tape, made by Kleen Stik Products division of Compac Corp., 420 Frelinghuysen Ave., Newark, N.J.

For laminating the tabbing **15** to the skirt **16**, a heat and pressure bonding adhesive is preferred. This adhesive advantageously is a polyester resin in a volatile halocarbon solvent, together with optional hardeners and the like. It likewise should be transparent and as colorless as possible. Suitable polyester adhesives are described in "Adhesives for Du Pont Mylar Polyester Film," published by E. I. du Pont de Nemours & Co.,

as Bulletin No. 17, August 1961, sixth edition, and subsequent editions thereof.

To manufacture the index tabs **11** of the invention, relatively simple modification of conventional continuous index tab equipment may be employed. Automatic equipment is advantageously used. Thus, in sequence, the following steps are carried out:

(1) Withdraw from coils a pair of abherent webs constituting strips **19** and containing, on each strip **19**, a layer of normally tacky and pressure sensitive adhesive **18**;

(2) Apply one such strip **19** onto a web constituting skirt **16** in unfolded form, adhesive side toward the skirt **16**;

(3) Fold the web of skirt **16** at about its center line, using a continuous mandrel, with the strips **19** facing inwardly;

(4) Apply heat sensitive polyester adhesive to the edge portions **21** of the web of tabbing material as the first step in making tabbing member **15**;

(5) Make a preliminary center fold of the tabbing **15** into a generally V shape with the adhesive-coated portions inward;

(6) Position the folded web of skirt **16** into place between the V of the tabbing material **15**;

(7) Apply heat and pressure to the edge portions **21** of the tabbing member **15** so as to adhesively laminate the two together;

(8) Pass the assembly through a heated forming die at about 260° F. to form the beaded portion **25** at the fold line of tabing **15** (a wire mandrel is used to expand the beaded portion while in the die);

(9) Optionally apply further pressure to bond the tabbing **15** to the skirt **16**;

(10) Cool the assembled tabbing; and

(11) Cut to size.

The foregoing operations, as indicated earlier, are best performed automatically and continuously. The resulting product is shown in FIG. 1, and is conventionally about six inches long. The index tabs **11** may then be packaged into suitable containers, either manually or automatically.

Application of an index tab **11** to a sheet of paper or the like **24** is best shown in sequence FIG. 2, FIG. 4, FIG. 4*a* and FIG. 5. Inviting attention to these figures:

FIG. 2 illustrates the first step of applying an index tab **11** to the paper **24**. After cutting the tab **11** to desired size, and with the abherent strips **19** in place, the tab **11** is placed saddle-wise along the sheet of paper **24** in any desired position. Since no adhesion is in contact with the paper, the tab can be positioned accurately at this stage, in contrast to conventional moisturable adhesive index tabs which, once placed, are in position whether corrected or not.

FIG. 4 shows the next step. With the thumb or another finger, the edge porttions **22** of the skirt **16** are lifted upwardly and curled outwardly away from the sheet **24**. Since the strips **19** are abherent, and are stiffer than the plastic of skirt **16**, they tend to curl or peel away from the skirt **16**, as shown in FIG. 4 and, in a more advanced stage, in FIG. 4*a*. It will be apparent, therefore, that with slight pressure on the bead **25** of the index tab **11**, the tab is maintained immovable, while the abherent strips **19** are rolled off and away from the skirt **16**.

As the last step in applying the present index tabs **11**, it is merely necessary to apply slight pressure to the edge portions **22** of the skirt **16**, as shown in FIG. 5. This bonds the tab **11** to the sheet of paper or the like **24**. If, as is preferred, the adhesive layer **18** (FIG. 3) terminates just short of the end **24** of the skirt **16**, removal of tab **11** is facilitated merely by inserting a knife blade or a fingernail under the end **24** and lifting the edge portions **22** away from the paper **24**.

After installing the index tab **11**, a paper or similar insert **20** may be slipped into the insert-receiving spaced-apart aperture **26** (as best shown in FIG. 3). The insert

20 bears indicia serving to identify materials filed behind the paper 24.

Thus it is apparent that there has been provided, according to the invention, an improved index tab that fully satisfies the objects of the invention. Not only may it be fabricated readily, but its virtues become evident when comparing its use with conventional moisturizable adhesive tabs.

We claim:

1. In an index tab for attachment to the edge of a sheet of paper or the like, and having:

(1) an insert-receiving tabbing member formed of a folded sheet of transparent plastic,

(2) a flexible skirt member formed of a folded sheet of transparent plastic,

(a) said skirt member being laminated at its fold portion to the inner edge portions of said tabbing member,

(b) with the respective folds parallel to each other,

(c) and with edge portions of said skirt member extending from said tabbing member, and

(3) a layer of adhesive on each of the extending edge portions of said skirt member,

the improvement wherein said index tab can be positioned on the edge of said sheet of paper or the like before the adhesive is exposed to the paper, comprising:

a normally tacky and pressure sensitive adhesive as the layer of adhesive on each of the inner extending edge portions of said skirt member, and

a removable adherent strip member over each layer of adhesive,

(a) said strip member being stiffer than the plastic of said skirt member,

(b) so that outwardly curling the edge portions of said skirt member peels said strip members after said index tab is positioned and thereby presents

said layers of adhesive to said sheet of paper or the like.

2. The tab of claim 1 wherein the plastic of said skirt member is polyethylene terephthalate.

3. Tab of claim 1 wherein both of said plastics are polyethylene terephthalate.

4. Tab of claim 1 wherein the plastic of said tabbing member is about three to five mils thick.

5. Tab of claim 1 wherein the plastic of said skirt member is about one to three mils thick.

6. Tab of claim 1 or 5 wherein said strip member is a silicone coated paper.

7. A method of applying an index tab to a sheet of paper or the like comprising:

(1) sheathing the edge of said sheet with an index tab having a flexible skirt member, a layer of normally tacky and pressure sensitive adhesive on each of the inner edge portions of said skirt member, and a relatively stiffer abherent strip member over each layer of adhesive,

(2) outwardly curling the edge portions of said skirt member so that said strip members peel from said adhesive,

(3) and pressing the edge portions of said skirt member so that said index tab is adhesively secured to said sheet.

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W. J. CONTRERAS, Assistant Examiner

PO-1050
(5/69)

UNITED STATES PATENT OFFICE
CERTIFICATE OF CORRECTION

Patent No. 3,566,522 Dated March 2, 1971

Inventor(s) Thomas A. Leach, Joseph E. Kohnke, Vernon J. Wiberg

It is certified that error appears in the above-identified patent and that said Letters Patent are hereby corrected as shown below:

Abstract, Line 16	The word adherent should be changed to read abherent.
Col. 1, Line 71	The word adherent should be changed to read abherent.
Col. 2, Line 39	The word adherent should be changed to read abherent.
Col. 2, Line 52	The word adherent should be changed to read abherent.
Col. 5, Line 31	The word adherent should be changed to read abherent.

Signed and sealed this 21st day of March 1972.

(SEAL)
Attest:

EDWARD M.FLETCHER,JR.
Attesting Officer

ROBERT GOTTSCHALK
Commissioner of Pat