United States Patent [19]

Light

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[54] **ADHESIVE AND TAPE DISPENSING DEVICE**

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[51] **Int. Cl.²** **B05C 3/12;** B05C 11/115

[58] **Field of Search** ..... 118/419, 416, 35, 37, 40, 118/43, 400, 428, 429; 117/122 R; 206/389, 409, 411, 447, 474, 324, 813

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[57] **ABSTRACT**

A device for so maintaining a roll of tape and a quantity of an adhesive that tends to harden when exposed to the ambient atmosphere, that substantially all of the tape and adhesive are out of contact with the atmosphere when the device is not in use. The device when in use, permits a desired length of the tape to be withdrawn therefrom and severed from the balance of the tape remaining on the roll. The withdrawn length of tape is enveloped in a continuous film of the adhesive, which film due to the structure of the device is of a desired thickness.

3 Claims, 6 Drawing Figures

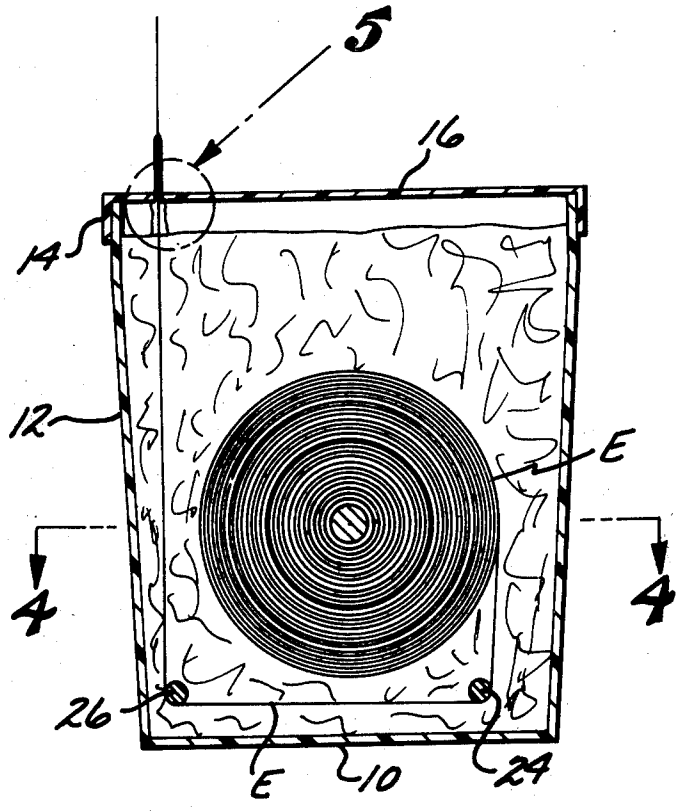


FIG. 1

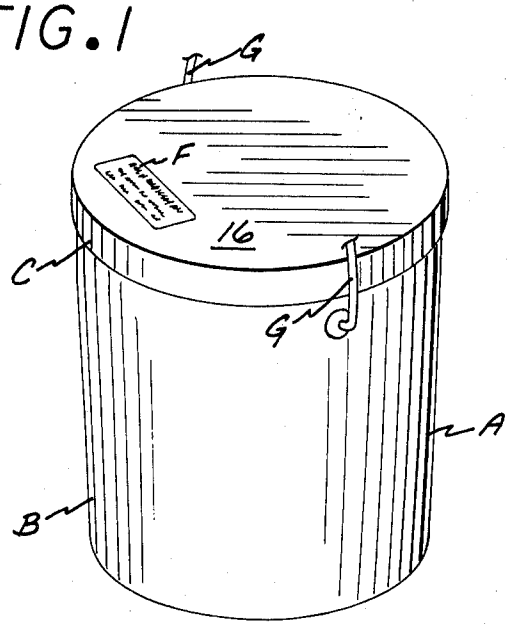


FIG. 2

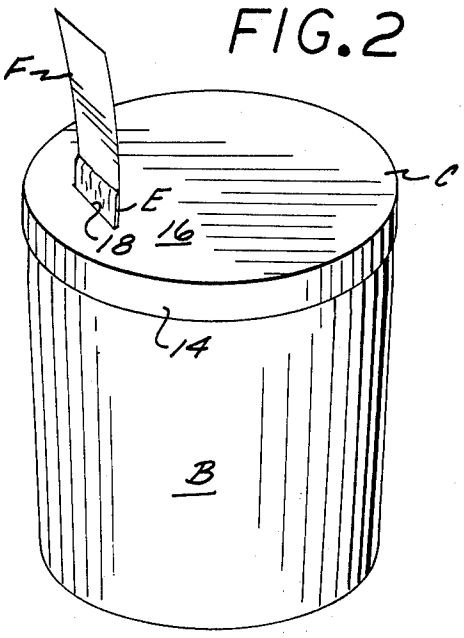


FIG. 3

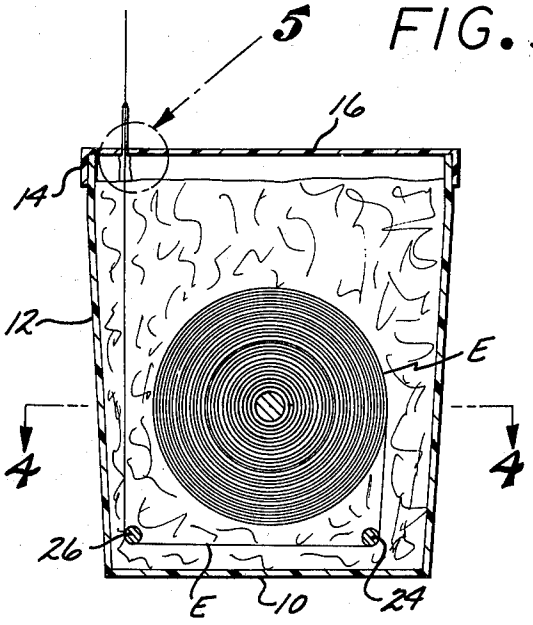


FIG. 4

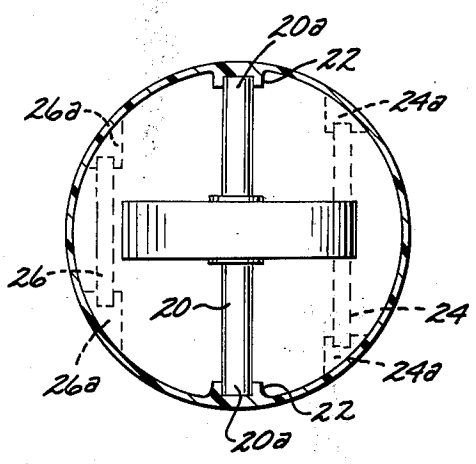


FIG. 5

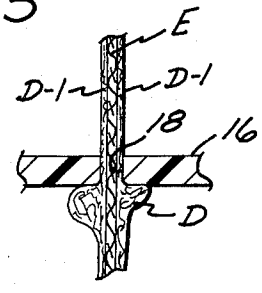
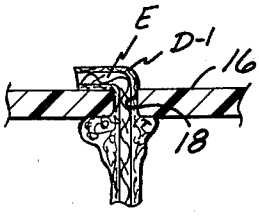


FIG. 6



ADHESIVE AND TAPE DISPENSING DEVICE

BACKGROUND OF THE INVENTION

1. Field of the Invention

Adhesive and tape dispensing device.

2. Description of the Prior Art

In the construction industry, it is necessary to seal the junction lines between panels of wall board with an adhesive covered tape. Various prior art devices have been proposed and used for this purpose. The previously available prior art devices have the operational disadvantages that they are unduly complicated, bulky, cumbersome, and are too expensive to be discarded when they have performed their intended function.

The primary purpose in devising the present invention is to supply a device that is of such simple, inexpensive structure that it may be discarded when the paste like adhesive contained therein has been depleted in forming a continuous film on tape.

Another object of the invention is to supply a device that maintains the adhesive which hardens when exposed to the atmosphere out of contact with the latter, and the device also serving as a support for a roll of tape that as sequentially withdrawn from the invention is automatically enveloped by the adhesive in a film of desired thickness.

Yet another object of the invention is to furnish a device that not only serves to store the adhesive out of contact with the atmosphere and act as a dispenser for tape coated with the adhesive, but is preferably of such weight and size that the device may be easily carried by one man from location to location on a jobsite.

A still further object of the invention is to furnish an adhesive coated tape dispenser in which a small portion of the tape and adhesive are used to form a temporary seal to protect adhesive in the interior of the invention from contact with the atmosphere when the invention is not in use.

SUMMARY OF THE INVENTION

The invention is used in combination with a quantity of an adhesive of paste like consistency that tends to harden when exposed to the atmosphere, and a roll of pliable tape to which the adhesive will adhere. The device is used for storing substantially all of the adhesive out of contact with the atmosphere when the device is not in use. However, when the device is used, it permits a desired length of the tape to be withdrawn therefrom, with the withdrawn length of tape being enveloped with a continuous film of the adhesive of a desired thickness.

The device includes a container that is defined by a bottom and a continuous wall that extends upwardly therefrom, with the container of such size that a roll of tape may be disposed therein and rotated on an axis parallel to the bottom of the container and upwardly disposed therefrom. A first means is provided within the container for rotatably supporting the roll to rotate on the above mentioned axis. First and second, spaced, transverse guides are disposed inside the container parallel to the axis, and adjacently disposed to the bottom.

A cover sealingly engages a free edge portion of the side wall, with the cover having a slot therein of slightly greater length than the width of the tape, and the width of the slot being substantially greater than the thicnkess of the tape.

A small sheet of air impervious material sealingly engages the cover and extends over the slot. The sheet is

secured to the free end of the roll of tape, with the tape extending from the roll thereof to the first guide, under the first guide to the second guide, and upwardly from the second guide to the sheet. The adhesive is provided in such quantity as to fill the container to at least the first means, and the sheet when removed from the cover permitting the tape from the roll to be withdrawn through the slot in a desired length. The tape, when withdrawn, from the slot is enveloped in a continuous film of the adhesive, with the thickness of the film being determined by the width of the slot. The adhesive enveloped tape, as it is withdrawn from the container is periodically severed from the balance of the tape remaining in the container.

The balance of the tape in the container has the free end portion thereof formed into an L-shaped tab that is placed in sealing contact with the exterior surface of the cover until additional tape from the container is again needed. The adhesive in the slot and on the tab hardens to form a temporary plug that fills the slot and prevents air from the ambient atmosphere entering the container to harden the adhesive remaining therein. The temporary plug so formed is easily separated from the cover by an upwardly directed force on the portion of the tape that partially defines the plug. After the temporary plug has been separated from the cover an additional length of the adhesive enveloped tape may be withdrawn from the invention.

Due to the simplicity of the invention and the inexpensive material from which it is formed, the invention may be discarded after the adhesive contained therein, as well, as the roll rotatably supported within the invention has been depleted.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a perspective view of the invention prior to use;

FIG. 2 is a perspective view of the invention with the invention ready for use, and capable of having adhesive coated tape withdrawn therefrom;

FIG. 3 is a vertical cross sectional view of the invention;

FIG. 4 is a transverse cross sectional view of the invention taken on the line 4-4 of FIG. 3;

FIG. 5 is a fragmentary vertical cross sectional view of the portion of the invention within the circle shown in phantom line in FIG. 3 and identified by the numeral 5;

FIG. 6 is a fragmentary vertical cross sectional view of the cover portion of the invention, with the free end of the adhesive coated tape having been formed into an L-shaped tab that seals with the exterior surface of the cover, and the adhesive on the tab and the adhesive in the slot in the cover hardening by exposure to the ambient atmosphere to provide a temporary plug that obstructs the slot and prevents air entering the interior of the container to harden adhesive remaining therein.

DESCRIPTION OF THE PREFERRED EMBODIMENT

The invention A as may best be seen in FIG. 1 includes a container B that has an open upper end that is removably closed by a cover C. The container B has a quantity of adhesive D contained therein, which adhesive is of a type that hardens when exposed to the atmosphere. The container B as may be seen in FIG. 3 serves to rotatably support a roll E of tape formed from

a pliable sheet material such as a woven fabric to which the adhesive D will adhere.

The container B includes a bottom **10** that has a continuous side wall **12** extending upwardly therefrom, with the free upper end of the side wall being removably engaged by a continuous flange **14** or other fastening means that forms a part of the cover C. The flange **14,** has a plate of rigid material **16** secured to one circumferential edge portion thereof to define the cover C.

The plate **16** as may be seen in FIG. **2** has an off centered slot **18** formed therein, which slot is of slightly greater length than the width of the tape E, and the thickness of the slot **18** being substantially greater than the thickness of the tape for reasons that will later be explained. The container B and cover C are illustrated in the drawings as being of circular transverse cross section, however, other geometrical forms may be employed in defining the container B and cover C if desired.

The roll E may best be seen in FIG. **3** and **4** is supported in a transversely positioned rigid member **20** as shown in FIG. **3** that has the free end portions **20***a* mounted in two ring shaped bosses **22** that are diametrically aligned as may be seen in FIG. **4** and extend towards one another from the side wall **12.** The bosses are either adhered or formed as an integral part of sidewall **12.** The container B is preferably formed from a commercially available polymerized resin that possesses some resiliency and as a result the container B may be temporarily deformed to permit the member to be inserted into bosses **22** as shown in FIG. **4.** The roll E may be either rigidly secured to the member **20,** in which event, both the roll E and member **20** rotate concurrently in the bosses **22,** or the roll may be rotatably supported on the member **20** and rotate relative thereto as tape is withdrawn from the invention A as will later be described.

The adhesive D, or "mud" as it is referred to in the construction industry, is present in the container B in such quantity as to be substantially depleted when all of the tape in the roll E has been withdrawn from the container B with a film of adhesive of a desired thickness thereon. The quantity of adhesive D in the container B is preferably such that the roll E is completely emersed therein prior to the invention A being initially used, and at the least the quantity of the adhesive should be such as to extend upwardly above the member **20** in the container B.

Two laterally spaced, transversely positioned first and second elongate guides **24** and **26** are provided that are secured to the interior of the container B as shown in FIGS. **3** and **4** by engaging pairs of bosses **24***a* and **26***a* situated within the confines of the container and adjacently disposed to the bottom **10** thereof. The tape E as may be seen in FIG. **3** extends downwardly from the roll thereof that is mounted on the member **20** and under the first guide **24** to thereafter proceed to the second guide **26** and extend under the latter, with the tape then proceeding upwardly to pass through the slot **18.** The second guide **26** and slot **18** are substantially parallel and lie in a vertically extending plane when the invention is disposed as shown in FIG. **1.**

Prior to the invention A being used a label that is defined by a sheet F, of air impervious material is removably secured to the plate **16** to cover the slot **18** therein as may be seen in FIG. **1.** The sheet F is secured to the free end of the tape E, and when the sheet F is removed from the plate **16** the tape may be sequentially withdrawn from the invention A through the slot **18.** Due to the tape having to transverse a path defines between the first and second guides **24** and **26** that are adjacently disposed to the bottom **10,** the tape E prior to being withdrawn will be enveloped in a film D-**1** of adhesive even though the quantity of adhesive remaining in the container is quite small. As the tape E is withdrawn from the container B, the width of the slot **18** limits the thickness of the film of adhesive D--**1** that will be premitted to adhere thereto, with the surplus adhesive D being wiped from the tape E on the underside of the plate **16** and dropping back into the container.

When a desired length of tape E has been withdrawn from the container B as above described, the tape is severed and used in forming a seal between the junction lines of two wall board panels (not shown). After each length of the tape E is severed as above described, the free end portion of the tape E remaining on the roll and the film D-**1** of the adhesive that envelopes this free end portion is bent into an L-shaped configuration as shown in FIG. **6** to hold the tape in a position where it may be readily grasped when it is desired to withdraw another length of adhesive coated tape from the container B.

In the event that there is a cessation of the tape removing operation, such as would occur at the end of a day, or when the invention A is being moved from one job site to another, the ambient atmosphere will cause the adhesive envelope D--**1** on the end portion of the tape E as shown in FIG. **6** to harden as well as adhesive D in the opening **18,** and this hardening results in a temporary plug being formed that prevents entry of air from the ambient atmosphere into the container B to harden the adhesive D remaining therein.

It will be apparent that the flange **14** must tightly engage the upper free end portion of the side wall **12** to prevent a substantial quantity of air from the ambient atmosphere seeping into the confines of the container B when the adhesive D is being stored therein. After a roll E has been withdrawn from the container B to the extent that all of the adhesive D therein has been depleted, the invention may be discarded as previously mentioned. It will be apparent that the length of the tape E and the quantity of the adhesive D in the container B must be so related to one another that to prevent waste of material, the adhesive D and the tape E should be depleted at substantially the same time.

In FIG. **1** it will be seen that for convenience a handle G preferably in the form of a bale may be included as a part of the invention A to permit the invention to be easily carried from one position to another.

The use and operation of the invention has been described previously in detail and need not be repeated.

I claim:

1. In combination with a quantity of an adhesive of paste like consistency that hardens when exposed to the atmosphere and a roll of tape to which said adhesive will adhere, said roll having a transverse opening in the center thereof, a device for storing substantially all of said adhesive out of contact with said atmosphere when said device is not in use, and said device when in use permitting a desired length of said tape to be withdrawn therefrom, with said withdrawn length being enveloped with a continuous film of said adhesive of a desired thickness, said device including:

a. a container defined by a bottom and a continuous wall that extends upwardly therefrom to terminate in a free edge, said container of such size that said roll may be disposed therein and rotated on an axis parallel to said bottom and upwardly disposed therefrom;

b. two transversely spaced and aligned tubular bosses supported from the interior surface of said sidewall a substantial distance above said bottom;

c. a rigid transverse member inside said container, said member having the ends thereof supported in said bosses, and said member extending through said opening in said roll rotatably supporting said roll thereon;

d. first and second, spaced elongate transverse guides inside said container that are adjacently disposed to said bottom and parallel to said rigid member, said first and second guides having the ends thereof rigidly secured to said side wall;

e. a cover that sealingly engages the free edge of said side wall, said cover having a slot therein of slightly greater length than the width of said tape, and the width of said slot being substantially greater than the thickness of said tape, with said tape extending from said roll thereof to said first guide, under said first guide to said second guide, and upwardly from said second guide through said slot, with said quantity of adhesive being sufficient to fill said container up to at least said bosses, said tape when withdrawn from said slot being enveloped in a continuous film of said adhesive, with the thickness of said film being determined by the width of said slot, said adhesive enveloped tape as it is withdrawn from said container being periodically severed from the balance of said tape remaining in said container, said balance of said tape having the free end portion thereof formed into an L-shaped tab that is placed in sealing contact with the exterior of the surface of said cover until additional tape from said container is again needed, said adhesive in said slot and on said tab hardening to form a plug that fills said slot and prevents air from the ambient atmosphere entering said container to harden said adhesive therein, and said ahrdened adhesive in said slot that defines said plug being easily separated from said cover by an upwardly directed force on the portion of said tape that defines said tab to permit an additional length of said adhesive enveloped tape to be withdrawn from said device and

f. a sheet that sealingly engages said cover and extends over said slot, said sheet secured to the uppermost end of said tape to prevent said end dropping downwardly into said container.

2. The device as defined in claim **1** which in addition includes:

f. handle means secured to said container for carrying said device from location to location.

3. The device defined in claim **1** in which said container and cover are formed from a resilient polymerized resin.

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