BANDAGE STORAGE AND DISPENSING CONTAINER

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This invention pertains to a container storage apparatus wherein gauze or like bandages are retained in a stacked array in one chamber or compartment. In another storage and dispensing chamber or compartment is carried a roll of adhesive tape in which one width of tape is stored and means is provided whereby this tape may be fed and cut to any desired length. Carried in a removable attached chamber is the stack of pads which are selectively brought to exposed use by a lever actuated mechanism. In an alternate arrangement there are four chambers each containing a stack of gauze pads, each stack being of a different size. These chambers are carried by apparatus selectively permitting a dispenser carrying one of four widths of tape to be brought into an alignment with the pad dispenser.

19 Claims, 4 Drawing Figures
BANDAGE STORAGE AND DISPENSING CONTAINER

BACKGROUND OF THE INVENTION

1. Field of the Invention

With reference to the classification of art as established in the United States Patent Office the present invention pertains to art such as found in the general Class entitled, "Surgery" (Class 128) and in the subclass therein entitled, "bandages" (subclass 155) and in the subclass entitled, "retainers" (subclass 171).

Further reference is made to the general Class entitled, "Severing by Tearing or Breaking" (Class 225) and the subclass therein entitled, "with means to move toward or into severing position" (subclass 23). Also reference is made to the general Class entitled, "Article Dispensing" (Class 221) and the subclass therein entitled, "with discharge assistant — with endless or rotary article gripper carrying means —" (subclass 217).

2. Description of the Prior Art

Adhesive strip bandages such as Band Aids (TM of Johnson & Johnson) are, of course, well known. Such bandages usually have a fixed sized adhesive strip and gauze pad secured to the adhesive surface usually midway of its ends. These strip adhesive bandages are made in many sizes but customarily each must be removed from a protective envelope before use. Conventionally, when an extra length of tape, a larger pad or an unsymmetrical arrangement is desired the components must be accumulated and then assembled. In the present invention the components are present and the gauze pad is delivered from a stored stack to a position where adhesive tape for delivery in a desired length is provided.

The present invention provides for retention in a container of an accumulated stack of a determined number of gauze or foam pads of like selected size. This stack of pads is carried on a spring-biased support plate urged toward a discharge apparatus which is actuated by a lever moved by the user. Each manipulation of the lever causes one pad to be lifted from the stack and brought in way of an adhesive strip delivered from another source of supply. This adhesive strip is fed from its dispenser to expose any desired length, then is severed and placed upon the pad just dispensed from the stack. The adhesive strip is then pushed against the gauze pad to position the pad on the strip, after which application of pad and tape to the patient proceeds in the usual manner.

SUMMARY OF THE INVENTION

This invention may be summarized at least in part with reference to its objects.

It is an object of this invention to provide, and it does provide, a storage container for a quantity or supply of gauze or foam pads of a determined size. These pads may be replaced when the supply is depleted. These pads are retained in a dispenser having a delivery means adapted to engage and remove the top gauze pad from the pile and bring it in way of an adhesive tape strip delivered from an associated dispenser and container. This tape dispenser includes a manipulative knob which is rotated to pull a strip of tape from a storage reel, the feeding continued until the desired length is discharged from the container, after which the selected length of tape is brought in way of a severing device. The tape is then severed and placed upon the exposed gauze pad. The tape and gauze pad is then applied to the patient in the usual manner.

It is a further object of this invention to provide, and it does provide, a storage container in which a supply of gauze pads are carried by a spring-biased support for advancement toward a one-at-a-time pad dispensing means actuated by manipulation of a lever. Attached to and cooperatively positioned so as to bring a strip of adhesive tape in way of the dispensed pad is an adhesive tape container and dispenser having advancing means for engaging and pulling a strip of adhesive tape from a roll carried within the dispenser. At the discharge outlet of the tape container is a cutting or serrating knife adapted to cut the tape when a desired quantity of tape strip has been discharged. Both the tape container and the gauze pad dispensers are adapted for replacement of their contents in their respective containers so that upon depletion of the supply a fresh supply of pads or roll of tape may be installed.

The combination bandage storage and dispensing container of the invention is contemplated in one of two modes. In a preferred or first mode, a tape of selected width is carried in a dispenser having means for feeding the strip and rotation of a roll of tape this supply roll the advanced tape is brought in way of a cutting member which permits the tape to be readily severed at the desired feed length. Immediately adjacent this tape discharge position is a pad supply chamber in which a stacked array of gauze or similar pads of determined size is stored. These pads are carried on a spring-biased platform for advancement toward a dispensing mechanism which is disposed to engage the pad by means of a pair of needle points. The actuation of a lever causes the needle points to engage the topmost pad and by rotation the pad is brought into an exposed position whereat the cut adhesive tape may be placed upon the pad for attachment thereto. This pad is then lifted by transport movement of the tape to its use position.

In an alternate arrangement multicontainers are provided so that instead of one width of adhesive tape four widths are provided. Each tape width is a roll carried in a separate chamber and each roll is associated with advancing means adapted for feeding to and in way of its own discharge outlet. Carried upon a spindle which is supported by the frame carrying the tape chambers and rotatable around this spindle are four pad dispensing and retaining chambers. In each chamber are stacked pads of a selected size. These four chambers preferably provide four different sizes of gauze pads. These pad dispensing chambers may be rotated to any desired position in way of a tape dispenser containing a roll of tape of determined width. The user of the device is thus permitted to select a gauze pad of a determined size and an adhesive tape strip of a determined width and selected length. The user rotates the pad dispensers on the spindle until a particular sized gauze pad dispenser is brought in way of a tape of the desired width. The pad is dispensed to the top of its dispenser and a strip of tape is fed from its dispenser until a determined length of tape is provided and then cut. These two components enable a particular pad and tape to be assembled and provided. The pad is positioned intermediate the ends of the tape as selected by the user. In addition to the above summary the following disclosure is detailed to insure adequacy and aid in under-
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standing of the invention. This disclosure, however, is not intended to cover each new inventive concept therein no matter how it may later be disguised by variations in form or additions of further improvements. For this reason there has been chosen a specific embodiment of a gauze pad and tape dispenser as adopted for making adhesive strip bandages. Also disclosed is an alternate embodiment providing multiple width tape supplies and multiple size bandage supplies.

These embodiments have been chosen for the purposes of illustration and description as shown in the accompanying drawings wherein:

**BRIEF DESCRIPTION OF THE DRAWINGS**

FIG. 1 represents a side view, partly in section, of a bandage storage and dispensing apparatus with a dispenser for a selected size of pads and an associated dispenser for one width of a roll of adhesive tape, these containers are adapted for replacement of contents, if desired;

FIG. 2 represents a sectional view taken on the line 2—2 of FIG. 1 and showing a preferred construction of the pad retaining chamber and dispenser;

FIG. 3 represents a sectional view taken on the line 3—3 of FIG. 1 and showing a preferred construction of the chamber and apparatus for feeding and severing the adhesive tape, and

FIG. 4 represents an isometric view, partly diagrammatic, of an alternate embodiment in which pads of different sizes are stored in stacks of like sizes in four chambers, and associated therewith are four adhesive tape rolls of different widths carried in four different dispensing chambers carried on a common carrier, as depicted, either the support base for the pad chambers or the support base for the adhesive tape dispensers are rotatable on a shaft or axle to a selectable index position.

In the following description and in the claims various details will be identified by specific names for convenience; these names, however, are intended to be generic in their application. Corresponding reference characters refer to like members throughout the several figures of the drawings.

The drawings accompanying and forming part of this specification although disclosing certain details of construction for the purpose of explanation may be modified in various respects without departure from the concept of the invention and the invention may be incorporated in other structural forms than shown.

**DESCRIPTION OF THE EMBODIMENT OF FIGS. 1-3**

Referring now in particular to the embodiment of FIGS. 1, 2 and 3, there is shown a plastic housing 10 in which is stored a stack of like-sized pads 12. This dispenser container 10 is movably attached by means of a tongue and groove arrangement or like means to an adhesive tape dispenser container 14. The stack of pads 12, usually gauze, is urged toward selectively manipulative pad dispensing apparatus by means of a compression spring 16. One end of this spring is retained in a centralized position by a ring 18 or a multiplicity of positioning buttons formed in the bottom of the dispenser container 10. A support or pusher platform 20 engages and is retained on the other end of the spring 16. The stack of pads carried on this spring-biased platform 20 is urged upwardly toward a rotatably supported picker head 22 whose upper half is substantially arcuate in shape. The lower portion is cut away to form a relief portion 23 extending from which is a pair of needle points 24 adapted to engage the fabric or sponge composition of the pads 12. The picker head 22 is rotatably supported on a spindle 26 carried in and by the dispenser container 10.

As seen particularly in FIG. 2, this spindle is attached and is rotated by a lever 28. This lever is engaged at its distal end by a coil spring 30 so as to be urged toward a repose condition substantially as seen in FIG. 1. Stop means, not shown, limits the return or repose of the picker head 22. The lower extending portion of the lever 28 is manipulated by the operator so that spindle 26 is rotated in a counterclockwise manner as seen in FIG. 1. This is against the bias of coil spring 30. During this rotation the projecting points of pin member 24 engage the fabric or sponge upper surface portion of the topmost pad 12 so as to engage this upper pad and lift or move it in a circular path to bring the pad out of the top of the dispenser container 10. The lower ends of the pads 12 engage the outer top surface of the dispenser container 10 to rest thereon as the bias in spring 30 causes the released lever to rotate clockwise to the condition of FIG. 1. A front arcuate guideway 32 and a rear arcuate guideway 34 provided in the housing assures that the rotating head 22 is carried in a steady condition. These guideways also act as dirt or dust stops to prevent contamination of the interior of the dispenser. Relief portion 23 formed on bottom side of head 22 insures that the upper portion of the pad 12 is pressed into the points 24 and is engaged thereby. With the rotation of head 22 the topmost pad is brought to the top and outside of the dispenser container 10.

At about this same time, of course, the tape to be used is dispensed. A roll of adhesive tape 40 is loosely carried on an axle 42 rotated by means of a knob 44. One-way rotation control means, not shown, insures that knob 44, as seen in FIG. 1, is rotated in only clockwise direction. A drive gear 46 carried by the knob axle and driven with the rotation of knob 44 drives a toothed roller 48 which supports and carries the strip 49 as it is pulled from roll 40. This strip 49 is brought in way of a pressure finger 50 so that the strip 49 of the tape therebetween is pulled from the roll of tape 40 by the rotation of the knob 44. At the exit passageway 52 where the tape strip 49 exits from the dispenser container 14 there is provided a cutter 54 against which the tape is brought to be severed after the desired amount of tape has been pulled from the roll 40 and fed from the dispenser container 14.

As seen in FIG. 3, the dispenser container 14 is constructed so that molded left housing portion 55 may be snapped into molded right housing portion 56. This assembled dispenser container 14 keeps the tape strip and roll in a covered condition but removal of housing portion 55 permits replacement of the roll of tape after the prior roll has been used. In a like manner, it is anticipated that the bottom portion of the gauze pad dispenser container 10 may be constructed so as to be removed and a replacement stack of gauze pads to be placed on platform 20. The new stack when inserted into the dispenser container 10 brings the top pad against the picker head 22. As the platform 20 is placed within the dispenser container 10 it is moved upwardly by spring 16 until the top pad is brought in engagement with head 22. The spring 16 is compressed enabling the
bottom portion of pad dispenser container 10 to be brought into a secured position. Retention of the bottom of the container in the side portions of the container can be by a removable pin or a snap lock.

DESCRIPTION OF THE ALTERNATE EMBODIMENT OF FIG. 4

Referring next and finally to FIG. 4, whereas in FIG. 1 only a single tape dispenser container and a single gauze pad dispenser container is depicted, in FIG. 4 there is provided four pad dispenser containers identified as 70, 72, 74 and 76. Each pad dispenser container is removably mounted on a square or rectangular support member 80 which, as shown, is rotatable around an axle 82. This axle 82 may be carried by a fixed base upon which is removably mounted four adhesive tape dispenser containers. Only two dispensers are shown in this FIG. as they obscure the other two. Those seen in this FIG. 4 are dispenser portion 86 and a dispenser portion 88. The other two dispenser portions, not seen, are carried at ninety degrees to dispensers 86 and 88.

A ball detent or other detent means may be provided in conjunction with the axle 82 and the support 80 so that if and when the pad dispenser containers 70, 72, 74 and 76 are rotated on the axle 82 they are stopped at a position to bring a dispensed gauze pad in way of a tape outlet for a tape of selected width. For example as and depicted, tape container dispenser 86 may accommodate one inch wide tape. The gauze pad to be delivered from the container 76 may be only one-half inch wide. If this is the size selected by the person who is preparing the strip bandage the two materials of this bandage may be supplied without repositioning of the containers. As depicted and still without rotation, an adhesive tape of about three-quarters of an inch wide may be dispensed from container 88 with the rotation of knob 44 and a gauze pad one inch wide may be dispensed from the dispenser container 70 by manipulation of the lever 28.

In its "at rest" position a pad picker head 22 carried in each container is rotated by manipulation of an attached lever 28. This actuation causes the topmost pad to be brought from the stack and to the outer surface of the housing 70. The strip of tape fed from container 88 is advanced a determined length and then severed after which it is combined with the just dispensed pad.

USE AND OPERATION OF MULTI-UNIT ASSEMBLY OF FIG. 4

The multi-unit assembly of FIG. 4 permits each lever of each pad dispenser unit to be actuated to cause one pad to be removed from the stack therein and brought to the outer surface of the container. This, of course, does not necessarily mean that only one gauze pad may be used with a strip of adhesive tape. For that matter, many gauze pads may be used since all that is required to secure a gauze pad of any selected size is the manipulating of a lever 28 on the container in which is stored the pad of desired size. The versatility provided by this multi-unit apparatus insures that the user is not restricted to one gauze or like pad but may use any number and sizes of pads. The multi-unit also enables the user to use two or three strips of tape with one or more pads. For example, the attention may be given one strip of adhesive tape and one gauze pad to make the initial application and then by merely rotating the knob 44 and severing the dispensed tape secure additional lengths of tape.

Whether the dispenser assembly of FIG. 1 or the multi-unit dispenser of FIG. 4 is provided, this invention enables an adhesive strip bandage to be readily constructed. The pad stack is protected by the container housing against contamination. The tape and its adhesive surface is protected in its own container until advanced to and through the discharge opening. The number of pads, number and length of tapes and position combinations thereof are merely a matter of manipulation and selection.

Terms such as "left," "right," "up," "down," "bottom," "top," "in," "out," "clockwise," "counterclockwise" and the like are applicable to the embodiments shown and described in conjunction with the drawings. These terms are merely for the purpose of description and do not necessarily apply to the position in which the pad and tape dispenser may be constructed or used.

While particular embodiments of the combination dispensers have been shown and described modifications may be made within the scope of the accompanying claims and protection is sought to the broadest extent the prior art allows.

What is claimed is:

1. A combination container for the separate storage and dispensing of pads and adhesive tape such as used for bandaging, said combination including: (a) a pad storage container adapted to slidably retain the sides of a stack of like-sized pads within said container; (b) a support member slidably carried within the container and providing means to engage and retain one end of the stack of pads; (c) a picker head rotatably mounted in said container, the head having at least two pin-like projections carried on and extending from the head and these pins moved with the rotation of the head; (d) bias means for urging the support member and the stack of pads carried thereon toward and to the picker head so as to bring the topmost pad into engagement with the pin-like projections when said head is in an "at rest" condition and to impale this topmost pad on these projections; (e) means for rotating the picker head so amount sufficient to move the impaled pad from its topmost position on the stack to a discharge condition outside the container and to then return said head to said "at rest" position and condition; (f) an adhesive tape storage container removably attached to the pad storage container, the tape storage container having means for rotatably retaining a roll of adhesive tape therein; (g) means for engaging and pulling a selected length of tape from the roll and for discharging this desired length of tape from an outlet of the container, and (h) means for severing the discharged length of tape from that portion of tape still connected to and wound on the roll, the dispensed pad and strip of severed adhesive tape being combined to provide an adhesive strip bandage for conventional use on a patient.

2. A combination container as in claim 1 in which the picker head is substantially cylindrical in configuration except for a relief portion in which are mounted pin-like projections, the topmost pad in the associated stack entering this relief for impalement on the projections and this pad remaining in the relief during movement from the stack to the outside of the container.

3. A combination container as in claim 2 in which the picker head is mounted in the container so as to be retained adjacent an opening provided in the container,
this opening having arcuate surfaces on both sides of the opening, the arcuate surfaces slidably engaging the cylindrical surface of the picker head to provide a sealing means for the chamber.

4. A combination container as in claim 3 in which the means for rotating the picker head is a lever attached to an axle portion thereof, and in which is provided a spring bias adapted to urge the picker head to an "at rest" and stop condition and the rotation of the head is against said bias.

5. A combination container as in claim 1 in which the adhesive tape storage container is removably joined to the pad container by a tongue and groove arrangement.

6. A combination container as in claim 1 in which the means for engaging and pulling a selected length of tape from the roll includes a toothed roller disposed to engage and support one side of the tape strip and a pressure arm adapted to engage the other side of the tape and push it into driving contact with the toothed roller.

7. A combination container as in claim 6 in which the toothed roller is driven by a meshed gear rotated by and with the rotation of a knob means which is carried on the outside of the tape container.

8. A combination container as in claim 7 in which the outlet of the tape dispensing container includes a serrated knife so positioned so that the exposed discharged tape strip may be brought thereagainst for severing of the strip.

9. A combination container assembly for the storage of a plurality of stacks of pads, each stack preferably of a different size and of a plurality of rolls of adhesive tapes, each preferably of a different width, said pads and tapes being combined for use as bandages, the combination container assembly including: (a) a plurality of pad storage chambers carried on a common support member each pad storage container adapted to sidely retain the sides of a stack of like-sized pads within said container; (b) a support member carried within each pad storage container and providing means to engage and retain one end of the stack of pads; (c) a picker head rotatably mounted in each of the pad storage containers, each head having at least two pin-like projections carried on and extending from said head, these pins moved with the rotation of the head; (d) bias means for urging each of the support members and the stacks of pads carried thereon toward and to the picker head in said chamber and to bring the topmost pad into engagement with the pin-like projections when said head is in an "at rest" condition and to impale this topmost pad on these projections; (e) means for rotating each picker head an amount sufficient to move the impaled pad from its topmost position on the stack to a discharge condition outside the container and to return said picker head to its "at rest" position and condition; (f) a plurality of adhesive tape storage containers removably attached to a common support member so as to position the tape storage chambers adjacent the pad storage chambers, each tape storage container having means for rotatably retaining a roll of adhesive tape therein; (g) means within each tape storage chamber for engaging and pulling a selected length of tape from the roll and for discharging this desired length of tape from an outlet provided in said tape storage container, and (h) means associated with each tape storage chamber for severing the discharged length of tape from that portion of tape still connected to and wound on the roll retained in said chamber, the dispensed pad and strip of severed adhesive tape being combined to provide an adhesive strip bandage for conventional use on a patient.

10. A combination container assembly as in claim 9 in which each of the picker heads are substantially cylindrical in configuration except that each has a relief portion in which are mounted the pin-like projections, the topmost pad in the stack associated with each head entering this relief for impalement on the projection and this pad remaining in the relief during movement from the stack to the outside of the container.

11. A combination container assembly as in claim 10 in which each of the picker heads is mounted in each of the pad containers so as to be retained adjacent an opening provided in the end of said container, each opening having arcuate surfaces formed on both sides of the opening, these arcuate surfaces slidably engaging the cylindrical surface of the associated picker head so as to provide a sealing means for the container.

12. A combination container as in claim 11 in which the means for rotating each of the picker heads is a lever attached to an axle portion on which the picker head is mounted and in which there is provided a spring bias associated with said head and adapted to urge each of the picker heads to an "at rest" and stop condition and with the rotation of each of the heads being against said bias.

13. A combination container assembly as in claim 9 in which each of the adhesive tape storage containers are removably attached to the associated common support member by a tongue and groove arrangement.

14. A combination container assembly as in claim 9 in which each of the pad storage containers are removably attached to the associated common support member by a tongue and groove arrangement.

15. A combination container assembly as in claim 9 in which each of the tape dispensers have means for engaging and pulling a selected length of tape from the roll which includes a toothed roller disposed to engage and support one side of the tape strip of the contained roll and a pressure arm adapted to engage the other side of the tape and push it into driving contact with the toothed roller.

16. A combination container assembly as in claim 15 in which each of the toothed rollers is driven by a meshed gear rotated by and with the rotation of a knob means which is carried on the outside of the tape container associated with said roll.

17. A combination container assembly as in claim 16 in which the outlet of each of the tape dispensing containers includes a serrated knife so positioned so that the exposed discharged tape strip may be brought thereagainst for severing the strip.

18. A combination container assembly as in claim 9 in which the common support member for the pad containers is rotatably retained to and by the common support member carrying the tape storage containers.

19. A combination container assembly as in claim 18 in which there is provided detent means associated with the rotatable retention of the common support member for the pad chambers and the common support member for the tape storage containers, said detent means providing means for selectively aligning one pad chamber with a desired tape dispensing chamber.

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