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K. W. THALHAMMER
COMBINED REEL AND CONTAINER

2,679,362

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Fig. 1.

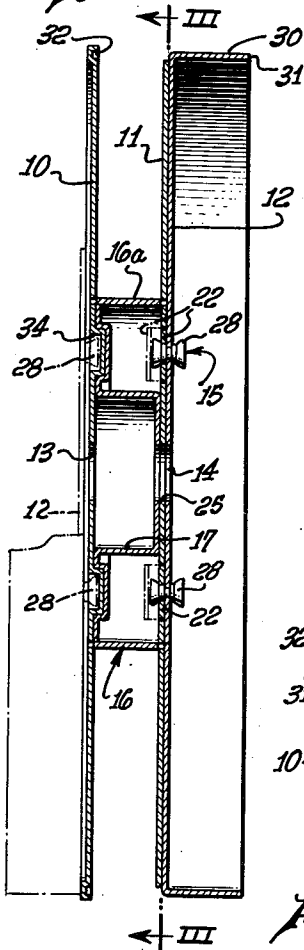


Fig. 2.

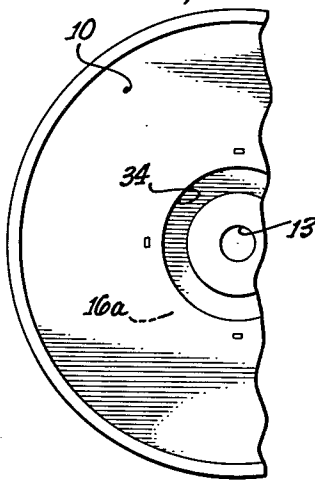


Fig. 2a.

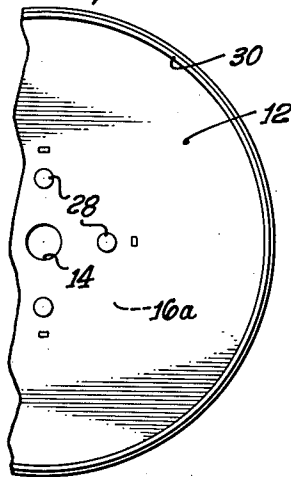


Fig. 4.

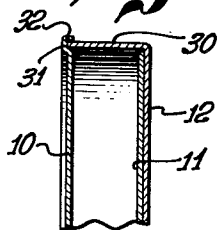


Fig. 3.

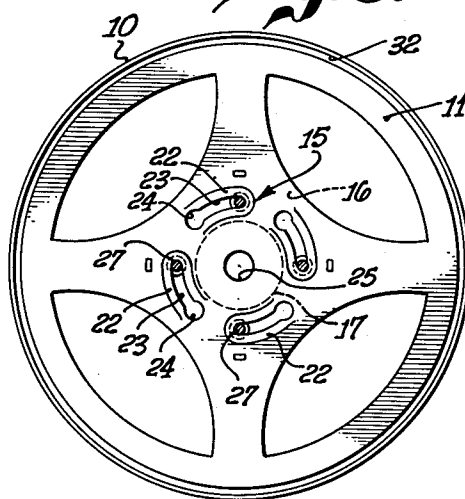


Fig. 5.

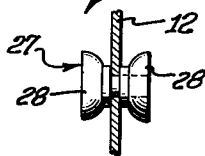
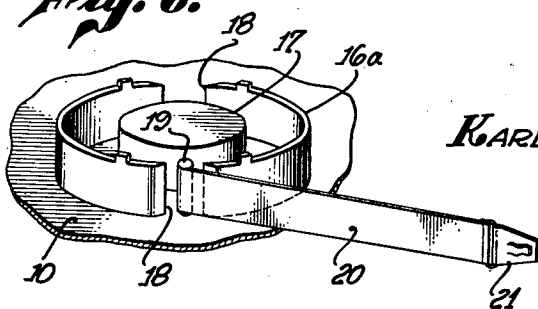


Fig. 6.



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2,679,362

COMBINED REEL AND CONTAINER

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Application August 14, 1952, Serial No. 304,334

5 Claims. (Cl. 242-70)

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This invention relates to a combined reel and container for use with strip material such as motion picture film.

Prior reel construction for strip film generally comprises two circular discs held in spaced parallel planes by a central axially disposed hub. In such prior reels it was difficult to attach an end of a film strip to a hub because of limited space between the spaced discs. In addition, such prior reels usually employed perforated discs and separate containers for such reels were used for storage of film carried thereby. Obviously, mislabeling of storage containers or misplacement of a film in a container would make difficult and aggravating the finding of a particular film so mislaid.

The present invention contemplates an improvement on my Patent No. 2,563,198 wherein a combination reel and container includes specific improved features. The present invention includes a container construction which facilitates stacking in interlocked relation a plurality of combined reels and containers for storage purposes. It also includes a means providing fool-proof handling of the combined reel when the cover member is being changed from one position to the other. A more positive seal between the cover member and the cooperable side member is also provided.

Therefore it is among the objects of this invention to primarily design and provide an improved reel and container, particularly adapted for storage and handling.

Another object of this invention is to design and provide an improved reel and container which is constructed so as to facilitate stacking a plurality of such containers in interlocked relation.

A further object of this invention is to design and provide a cover for such a combined reel and container which is adapted to positively interlock with a cooperable film retaining side member and to provide a positive seal with a different film retaining side member for storage.

A still further object of this invention is to design and provide a combined reel and container including three side members, one of said side members being removable and reversible to provide a cover in one position and a braking surface in another position.

Still another object of this invention is to design and provide such a combined reel and container wherein an intermediate film retaining member provides means for interlocking with cooperable means on the reversible side member.

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The invention contemplates a combined reel and container of light weight, simple construction, inexpensively manufactured and capable of being conveniently stacked.

Other objects and advantages of this invention will be readily apparent from the following description of the drawings in which an exemplary embodiment of this invention is illustrated.

In the drawings:

Fig. 1 is a transverse sectional view of a combined reel and container embodying this invention, the section being taken in a plane bisecting the device.

Fig. 2 is a half side view of Fig. 1 as viewed from the left.

Fig. 2a is a substantially half side view of a combined reel and container shown in Fig. 1, as viewed from the right of Fig. 1.

Fig. 3 is a side view of the intermediate film retaining member as viewed from the plane indicated by line III-III of Fig. 1.

Fig. 4 is a fragmentary sectional view showing the outer side members in cover or container forming position.

Fig. 5 is a fragmentary sectional view showing a double headed button or holding means provided on the cover side member.

Fig. 6 is a fragmentary perspective view of the hollow hub member employed with this invention.

The combined reel and container of this invention includes three axially ported circular members 10, 11 and 12 adapted to be positioned in spaced parallel planes. The members 10 and 12 comprise outer side members and are preferably imperforate or formed of solid sheet material except for axially aligned ports 13 and 14 therein.

The intermediate member 11 is of slightly smaller diameter than the members 10 and 12 and is axially ported to correspond to ports 13 and 14. The outer side (or cover) member 12 is removably and reversibly attached to the intermediate member 11 by interlocking means generally indicated at 15 to be described in detail later.

The outer side member 10 carries on the inner face thereof, a hollow centrally disposed cylindrical hub member 16 having a cylindrical face about which strip film may be wound. The hub 16 may be secured to the inner face of side member 10 by any suitable means such as spaced rivets. The hub 16 includes a central boss 17 defining a circular chamber with the cylindrical wall 16a forming the cylindrical face, the boss

17 having a ported flat face lying in the plane of the circular edge of the cylindrical wall of the hub. The width of the cylindrical face is slightly greater than the width of the strip film to be carried by the reel.

The hub 16 may be provided with diametrically opposite lateral extending slots 18. Radially inwardly and centrally disposed with respect to one of said slots 18 may be an axially extending pin 19 to which may be connected by suitable means a thin flat metal band 20 providing a leader, the free end of which has means 21 for connection to and holding of an end of a film strip. The length of band 20 is approximately one-half the outer circumference of the cylindrical face on the hub 16 so that when film is wound about said hub, the film connection at 21 will fall within the diametrically opposite slot 18. The band 20 is also long enough to extend beyond the circumference of the side member 10. The above described means for attaching a film strip to a reel is described and claimed in detail in my co-pending application Serial No. 271,385, filed February 13, 1952, now abandoned.

Secured to the outer face of hub 16 by any suitable means such as spaced rivets or welding is the intermediate film retaining member 11 which may be perforated or provided with openings as illustrated to afford observation of film wound thereon when the outer side member 12 is removed. The member 11 is formed with a diameter slightly less than the diameter of side members 10 and 12.

The intermediate member 11 is provided with a plurality of circularly arranged curved resilient tabs 22 stamped from the central portion of member 11 and lying inwardly of the cylindrical face of the hub. The resilient tabs 22 are normally biased inwardly within the circular chamber of the hub 16. Each resilient tab 22 includes an elongated arcuate slot 23 commencing at an enlarged opening 24 formed in the portion of tab 27 lying virtually in the plane of member 11. The opposite inwardly extending free end of each tab 22 lies normally inwardly from the intermediate member 11. The intermediate member 11 is axially ported at 25.

The removable and reversible outer side cover member 12 carries a plurality of circularly spaced oppositely projecting holding means or buttons 27 for interlocking engagement with the resilient tabs. Each of said holding buttons 27 includes two enlarged heads 28 each carried in spaced relation to the opposed face of the side member 12. The buttons 27 are adapted to be inserted within the enlarged openings 24 when attaching side member 12 to the intermediate member 11. After such insertion the members 11 and 12 are drawn into tight face-to-face contact by turning member 12 through a relatively small angle so as to move the shank of the engaged portions of said buttons along slots 23 in the resilient tabs 22. The oppositely directed arrangement of the double-headed buttons 27 enables the cover member 12 to be readily attached to the member 11 in reverse position.

The cover member 12 includes a cylindrical cover flange 30 formed integral with the outer circumferential margin thereof. The cover flange 30 provides, when positioned in outwardly directed relationship to the intermediate member 11, a cylindrical braking surface which may be used during an unwinding and winding operation.

In reverse position of member 12 the cylindrical

flange 30 encloses the outer circumferential edge of intermediate member 11 and extends between the members 10 and 11 to afford a cover for film wound between members 10 and 11.

The free circular edge margin 31 of flange 30 is adapted to be snugly accommodated within an inwardly facing circumferential groove 32 formed on the circumferential margin of outer side member 10. Thus when the double-headed buttons 27 engage the resilient tabs 22 and the member 12 is turned to draw the member 12 into tight face-to-face relationship with intermediate member 11, the edge 31 of the cylindrical flange 30 is also urged into snug abutment with the walls of the circumferential groove 32. A weather tight moisture-proof seal is thus provided for protection of film during storage. It is understood that the circumferential groove 32 may be coated with a resilient, yieldable soft material such as rubber or a gasketing material so as to afford effective and complete seal between the members 12 and 10.

When the combined reel and container is used for storage it is often desirable to stack such containers in close adjacent face-to-face relation. To facilitate this stacking and to aid in maintaining a plurality of containers in stacked relation, a centrally disposed circular recess 34 is provided in the outer face of said member 10, the radius of said circular recess being virtually equal to the radial distance of the double-headed buttons from the axis of the container. Thus when containers are placed into adjacent relationship, nonengaged outwardly projecting portions of buttons 27 are accommodated within the circular recess 34 so as to permit the containers to abut along their outer faces in axial alignment and to prevent lateral displacement of one container with respect to the other.

It will thus be readily apparent to those skilled in the art that a combination reel and container is provided of simple construction and having a positive film retaining and guiding means, a positive cover seal when used in the form of a container, and having positive means for stacking a plurality of such containers in close side-by-side relationship. The provision of an intermediate perforated side member 11 fixed to the hub member cooperates with the solid imperforate side member 10 to retain film wound therebetween about the hub and since the diameter of the intermediate member is less than the diameter of the outer members 10 and 12, the intermediate member 11 does not interfere with the function of the cover member 12 when it is employed in cooperation with the member 10 to provide a container. The cooperable cover flange 30 and circumferential groove 32 on the respective members 12 and 10 provide a positive seal when the cover member is drawn into tight relationship by the holding means provided on the intermediate member and cover member. The holding means in the form of double-headed buttons provided on the cover member also serves to cooperate with the member 10 of an adjacent combination reel and container by projection into the circular recess provided in aligned relationship therewith in the side member 10 for prohibiting lateral displacement of adjacent side-by-side positioned reel containers, and thus affords a means for facilitating stacking of a plurality of adjacent containers of this invention.

It is understood that various changes and modifications may be made in the combined reel

and container described above which may come within the spirit of this invention, and all such changes and modifications coming within the scope of the appended claims are embraced thereby.

I claim:

1. In a combined reel and container for strip film and the like, the provision of: a first circular axially ported imperforate side member having an inwardly facing circumferential groove and an outwardly facing, centrally disposed annular recess; a coaxial hollow hub member carried on and extending inwardly from the first side member; a second axially ported intermediate member carried on the inner face of the hub member and having a diameter less than the diameter of the first side member; a plurality of curved resilient holding tabs on said intermediate member and inwardly biased into said hollow hub member and formed opposite said annular recess; a third circular axially ported imperforate cover side member having holding means provided with oppositely projecting portions selectively engageable with said holding tabs to reversibly attach said cover member to the second intermediate member; and said cover member having a cylindrical flange having edge extremities receivable within the circumferential groove in one position when providing a sealed container and presenting a cylindrical braking surface spaced from the first member in another position, the disengaged portion of the holding means being adapted to be received within the annular recess formed on an adjacent first member for interlocking adjacent containers when in stacked relation.

2. In a combined reel and container for strip film and the like, the provision of: a first circular axially ported imperforate side member having an inwardly facing circumferential groove; a coaxial hollow hub member carried on and extending inwardly from the first side member; a second axially ported intermediate member carried on inner faces of the hub member and having a diameter less than the diameter of the first side member; a plurality of curved resilient holding tabs on said intermediate member and inwardly biased into said hollow hub member; a third circular axially ported imperforate cover side member having holding means provided with oppositely projecting portions selectively engageable with said holding tabs to reversibly attach said cover member to the second intermediate member; and said cover member having a cylindrical flange having edge extremities receivable within the circumferential groove in one position when providing a sealed container and presenting a cylindrical braking surface spaced from the first member in another position.

3. In a combined reel and container, the com-

ination of: two circular axially ported film retaining members lying in spaced parallel planes, one of said members being imperforate and having an inwardly facing circumferential groove formed radially outwardly of the circumferential edge of the other of said members; a hollow cylindrical axially ported centrally disposed hub member connecting said two members in said spaced relation; a selectively attachable circular axially ported cover member having a cylindrical circumferential flange adapted to extend over the edge of said other of said members for accommodation of the edge margin of said flange within said groove in one position and to extend away from said retaining members in another position to provide a braking surface; holding means on said cover member; and resilient holding means on said other of said members selectively engageable with said holding means on said cover member for driving said latter member and said other of said members into tight face-to-face relation.

4. A device as claimed in claim 3 wherein the said one of said members is provided with a centrally disposed annular recess adapted to interlockingly receive portions of holding means carried by the cover member of an adjacent reel and container.

5. In a combined reel and container, the combination of: two axially ported film retaining members lying in spaced parallel planes, one of said members having an inwardly facing circumferential groove formed radially outwardly of the circumferential edge of the other of said members; a hollow axially ported centrally disposed hub member connecting said two retaining members in said spaced relation; a selectively attachable axially ported cover member having a circumferential flange adapted to extend over the edge of said other of said retaining members for accommodation of the edge margin of said flange within said groove in one position and to extend away from said retaining members in another position to provide a braking surface; and means on said cover member and means on said other of said retaining members selectively engageable for holding said cover member and said other of said retaining members in assembly in either of said positions.

References Cited in the file of this patent

UNITED STATES PATENTS

Number	Name	Date
2,494,612	Goldberg et al. -----	Jan. 17, 1950
2,563,198	Thalhammer -----	Aug. 7, 1951

FOREIGN PATENTS

Number	Country	Date
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