

Jan. 27, 1953

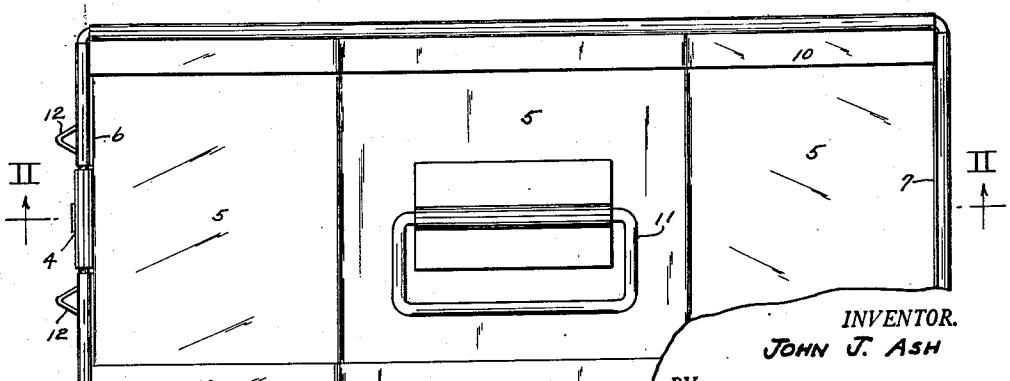
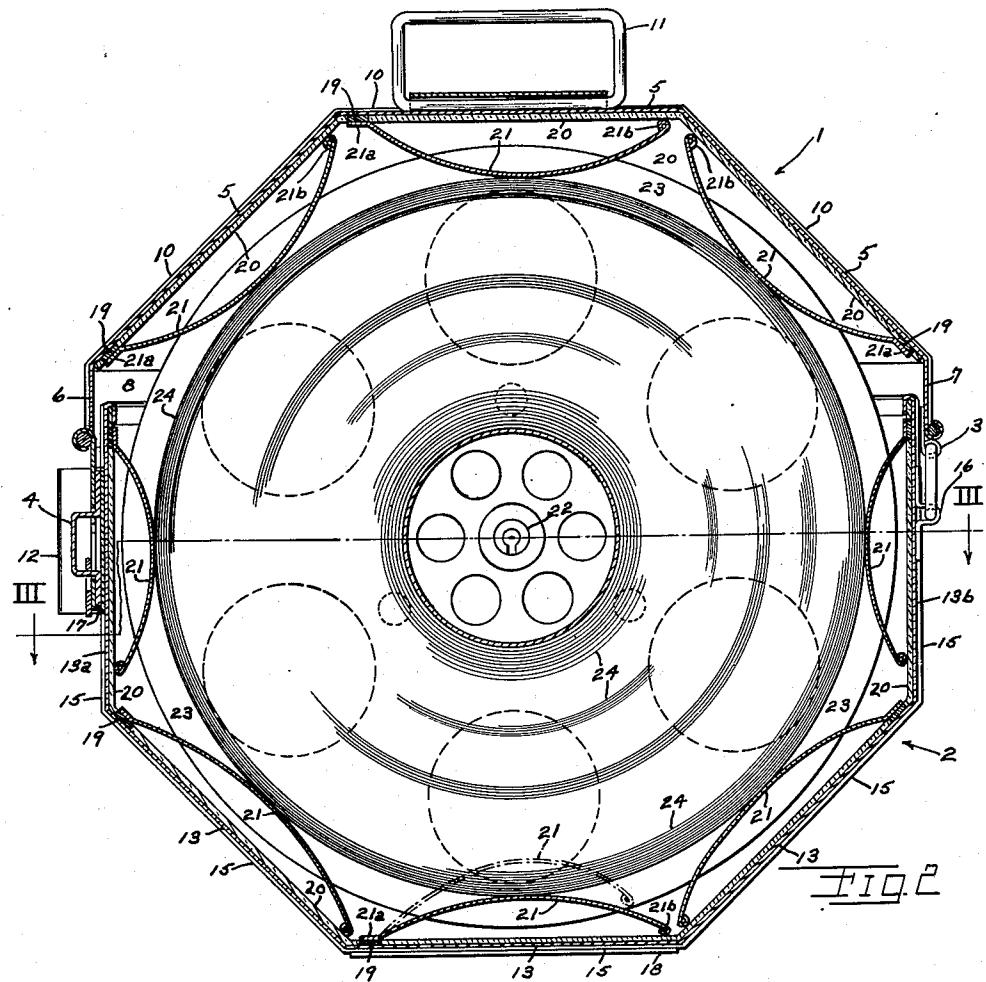
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**2,626,705**

**FILM SHIPPING CASE**

Filed March 4, 1950

2 SHEETS—~~1~~ SHEET 1



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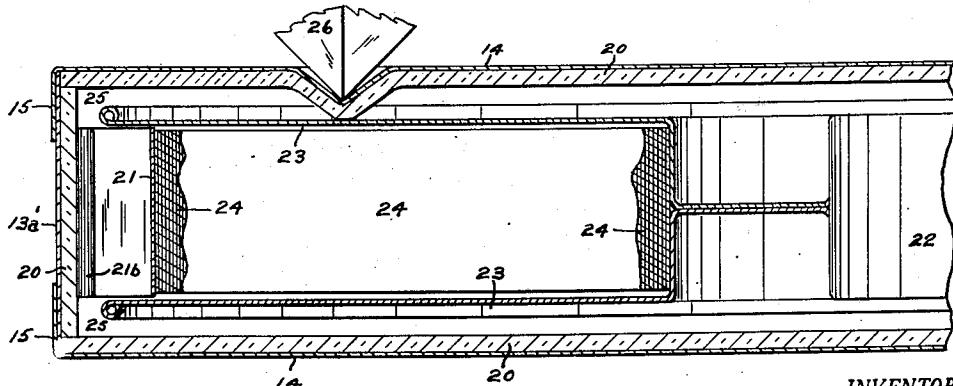
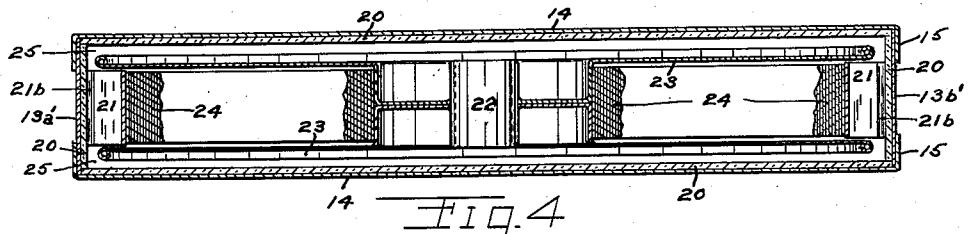
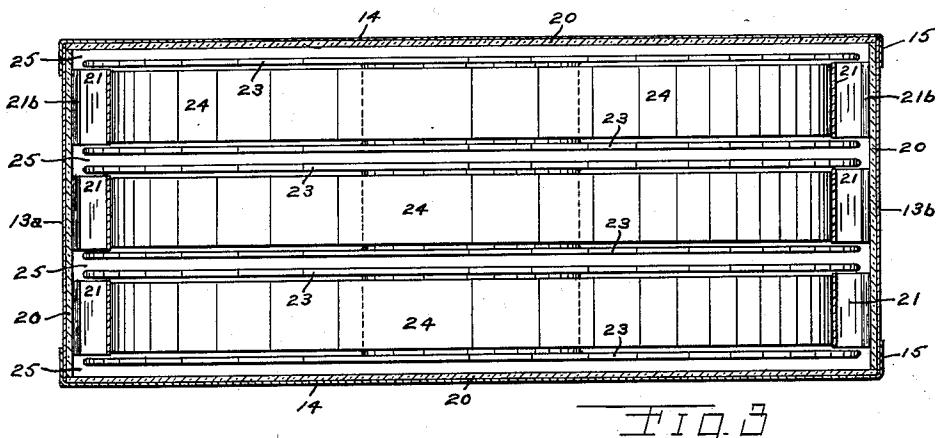
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FILM SHIPPING CASE

Filed March 4, 1950

2 SHEETS—SHEET 2



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## UNITED STATES PATENT OFFICE

2,626,705

## FILM SHIPPING CASE

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Application March 4, 1950, Serial No. 147,666

5 Claims. (Cl. 206—52)

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This invention relates to a case and more specifically to a case in which reels of movie film are placed for shipping and storage.

Reels of moving picture film must by necessity be frequently transported about the country from theater to theater and stored for considerable lengths of time. Such a film is quite valuable and much time and money lost if it is damaged. Often, due to rough handling in shipping, sharp objects dent the cases and film so badly as to make the film practically useless; the flanges of the reels may be bent together and the film loosened from the reel by such treatment. Cases of present types are entirely inadequate to guard the film and reels from this type of damage.

An object of my invention is to provide an improved case which will protect the enclosed film and reels from damage due to denting of the container.

Another object of my invention is to provide an improved case in which the reels of film are shock-mounted.

Another object of my invention is to provide an improved case in which bending together of the reel flanges is resisted.

Another object of my invention is to provide an improved case in which a number of reels may be carried without damaging contact with each other.

A further object of my invention provides for a case in which reels of film may be transported without loosening of the film.

A further object of the invention provides for a case in which both full and partly filled reels may be intermixed without disadvantage.

A still further object of my invention provides for a case which is economical and simple in manufacture.

Further objects and features of my invention will become apparent from the following description.

In the drawings, which illustrate two embodiments of my invention, and in which like numerals refer to like parts throughout,

Fig. 1 is a top view of my container adapted to carry three reels.

Fig. 2 is a sectional view taken on line II—II of Fig. 1.

Fig. 3 is a sectional view taken on line III—III of Fig. 2.

Fig. 4 is a sectional view of a modification of my container adapted to carry a single reel, the section being taken similarly to Fig. 3, and

Fig. 5 is an enlargement of a portion of Fig. 4 and shows a dent being put in the container by a sharp instrument.

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Referring to Figs. 1, 2 and 3, my three-reel case comprises an upper section 1 and a lower section 2, connected by means of a link hinge 3 and provided with a lock 4.

The upper section 1 is composed of sides 5 and extended portions 6 and 7 which carry parts of previously-mentioned lock 4 and hinge 3. Sides 5 and extensions 6 and 7 are preferably formed from a strip of sheet metal bent to the desired shape. End walls 8 are identical in size and shape and are extended and bent over to form flanges 10 to which are welded sides 5 and extended sides 6 and 7.

Attached to the uppermost side 5 is a carrying handle 11.

Lock 4 is protected by guards 12 to prevent damage should the case be accidentally set down on the lock or should an external object contact it.

The lower section 2 is composed of a sheet metal strip bent to form sides 13, and identical end walls 14 which are extended and bent over to form flanges 15 to which are welded sides 13. Flanges 15 on side 13b also carry the lower part of hinge 3 at 16, and side 13a carries part of lock 4 at 17. Attached by spot welding to the lowermost side 13 opposite handle 11 is a base piece 18 on which to rest the case.

The inside of the case is lined with heavy paper or cardboard 20 to protect the reels from damage should they contact the walls or sides of the case. Through the liner 20, metal filler strips 19 project, one being spot welded to each of the sides 5 and 13 in order that springs hereinafter described may be firmly attached to the sides by spot welding to the strips. It is to be understood that apertures could be made in the liner and the springs attached directly to the sides by welding, riveting, or bolting. I show welding through filler strips merely as a preferred method in this instance.

Means is provided to hold the reels of film separated from each other and without contact with the walls or sides of the case. In the preferred embodiment shown and described, such means consists of half-elliptical spring steel strips 21, spot welded to filler strips 19 at ends 21a. The ends 21b remote from filler strips 19 are rolled or curved so that they may slide easily along the liner 20 as the springs 21 are flattened by pressure. With no such pressure present, each spring 21 assumes the shape shown in dotted lines on the lower side 13 in Fig. 2.

In my multi-reel case, each group of springs mounted in side by side relationship (Fig. 3) forms a spring group and is hereinafter referred

to as such. The number of springs in a group is, of course, equal to the number of reels to be contained in the case.

The reel and film shown in Figs. 2, 3, 4 and 5 form no part of my invention per se, and are shown only to illustrate the various features and advantages of my case.

A standard moving picture film reel comprises a hub 22 by means of which the reel is held on the projection machine, and parallel circular flanges 23 extending radially outward from the hub 22 and between which the film 24 is retained. The flanges 23 being large and supported only at the center, they may be easily bent inward with resultant damage to the film. The reel is constructed to allow a clearance space between the flanges and film.

In my invention I make the springs 21 of greater width than the film but less than the distance between the reel flanges. Thus, when a reel containing film is placed in my case, the springs fit between the reel flanges and against the film. In effect, the film is supported in the case by direct engagement with the springs, and so the film cannot unwind or loosen from the reel.

As shown in Fig. 3, I leave a space 25 between the several springs 21 of a spring group so that the reels are spaced from each other and individually supported. Thus there is no possibility of a reel being deformed by the weight of the others should the case be tipped over, nor can a shock be transmitted by contact between the reels.

In Figs. 4 and 5 I have shown a single-reel case similar in construction to the three-reel case previously described, the primary differences being that the filler strips and the sheet metal strips forming the sides are narrower than in the three reel case and only one spring is attached to each filler strip. That is, side extensions 13a' and 13b' in Figs. 4 and 5 and filler strips (hidden) are substantially one-third as wide as extensions 13a and 13b and filler strips 19 shown in Figs. 1, 2 and 3. Again, spaces 25 are provided between the reel and the case, so that the reel-film unit is supported only by springs 21, and no part of the reel touches the case.

In Fig. 5 I have shown the end wall 14 of my single-reel case being dented by a sharp object 26. The heavy paper lining 20 is bent inward toward the reel but, due to the space 25 between reel and end wall 14, the reel and film are not damaged. Were the blow even heavier, flanges 23 would still not damage the film because spring 21, being wider than the film, acts as a spacer to keep the flanges from pinching together. The flanges 23 are thus bridged between the reel hub 22 and the unyielding dimension of springs 21.

In operation the weight of the film and reel pressing against springs 21 tends to flatten out the springs and causes the free end 21b of each spring to move along the paper-lined side 20. The springs on the vertical sides (Fig. 2) are arranged pointing downward, as are those on the slanting sides of the lower section 2. Thus when the reel is placed in the lower section, the springs slide with the reel rather than against it. Similarly, the springs on the slanting sides of the upper section 1 point upward. As the upper section is closed down on the reel and film, there is a minimum of friction between the film and springs. When the reel is not full, the springs would be flattened to a lesser degree, but the reel would still ride in approximately the same position in the case with each spring in contact with

the film to prevent any loosening or unwinding.

I have shown and described my three-reel case merely to illustrate the features embodied in a multi-reel case, which can be made to hold two, three or more reels. Therefore, I do not limit my invention to the single and three-reel cases.

From the foregoing detailed description of two embodiments of my invention, it is apparent that I have provided an improved case which will effectively protect the films and reels from damage, each reel being individually suspended on springs thus protecting the film and reel as well as keeping the film wound tightly on the reel.

In the preferred embodiments of my case, I have constructed it principally of sheet metal because of each of manufacture, durability, and strength. However, it is to be understood that various parts could be constructed of material other than metal and in no sense do I limit myself to the metallic type of construction.

While I have made my case of octagonal shape, it is anticipated that it could be of various shapes. In the same sense, the number of springs provided is not limited.

Various changes in details and arrangement of parts can be made by one skilled in the art without departing from the spirit of my invention or the scope of the appended claims.

What I claim is:

1. In a motion picture film reel and case of the class wherein a reel has two substantially parallel circular flanges supported by and extending radially outward from a hub, a film wound on said reel between said flanges, the case having two substantially parallel end walls of greater perimeter than said reel, a plurality of sides connected with and spacing said end walls, said case being divided adjacent a diameter of said reel into upper and lower sections, and means separably joining said sections, the combination with said case of a plurality of spring strips mounted one on the interior face of each of said sides and projecting along its associated side, each of said spring strips being of half-elliptical configuration convex inwardly to engage the periphery of said wound film and of a width less than the separation of the flanges of said reel but greater than the width of said film, each of said spring strips attached to a side on one end and slidably engaging the same side on the other end, whereby said flanges form a bridge between said hub and the unyielding dimension of said springs when said reel is placed in said case, and whereby said spring strips resiliently mount the reel in spaced relation to said side and end walls.

2. In motion picture film reels and a case therefor of the class wherein each reel has two substantially parallel circular flanges supported by and extending radially outward from a hub, a film wound on each reel between said flanges, a case having two substantially parallel end walls of greater perimeter than each reel, a plurality of sides connected with and spacing said end walls, said case being divided adjacent the diameters of said reels into upper and lower sections, and means separably joining said sections, the combination with said case of a plurality of spring strips mounted in side-by-side relationship on the interior face of each of said sides projecting along said side, the number of said spring strips mounted on each of said sides being equal to the number of reels to be contained in said case, each of said spring strips being of half-elliptical configuration convex inwardly to engage the periphery of said wound film and of a width

less than the separation of the flanges of each reel but greater than the width of said film, each of said spring strips attached to a side on one end and slidably engaging the same side on the other end, whereby said flanges of each reel form a bridge between said hub and the unyielding dimension of said springs when said reel is placed in said case, and whereby said spring strips resiliently mount each reel in spaced relation to said side and end walls and to the other reels in said case.

3. A film case as set forth in claim 2, wherein said springs on the downwardly extending sides of said lower section are fastened at their upper ends and said springs on the downwardly extending sides of said upper section are fastened at their lower ends whereby to reduce friction between said film and springs when placing said reel in said case.

4. In combination, a film reel having parallel circular flanges supported by and extending radially outward from a hub; film wound on said reel; a case having walls and containing said reel; inwardly directed spring strips on the inside of said case, all of said strips lying in a common plane; each strip being attached at one end to the inside of said case, being of half-elliptical configuration convex inwardly and extending between said flanges to engage said film, being slidably engaged with said case at its other end and being of a width less than the separation of the flanges of said reel but greater than the width of said film; whereby said spring strips mount said reel in spaced relation to the walls of the case, prevent the flanges from pinching and damaging the film, and prevent the film from unwinding.

5. In a motion picture film reel and case of the class wherein a reel has two substantially parallel circular flanges supported by and extending radially outward from a hub, said flanges being

spaced apart to receive a film of predetermined width, the case having two substantially parallel end walls of greater perimeter than said reel, a plurality of sides connected with and spacing said end walls, said case being divided adjacent a diameter of said reel into upper and lower sections, and means separately joining said sections; the combination with said case of a plurality of spring strips mounted one on the interior face of each of said sides and projecting along its associated side, each of said spring strips being of half-elliptical configuration convex inwardly to engage the periphery of a film wound on said reel, said spring strips being of a width less than the separation of said flanges of said reel but greater than the predetermined width of the film, each of said spring strips being attached to a side on one end and having a distance from end to end of said spring less than the length of the associated side, whereby said flanges form a bridge between said hub and the unyielding dimension of said springs when said reel is placed in said case, and whereby said spring strips resiliently mount the reel in spaced relation to said side and end walls.

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