May 3, 1949. W. P. LLOYD 2,468,767

FILM REEL CONSTRUCTION

Filed April 15, 1946

Fig. 1.

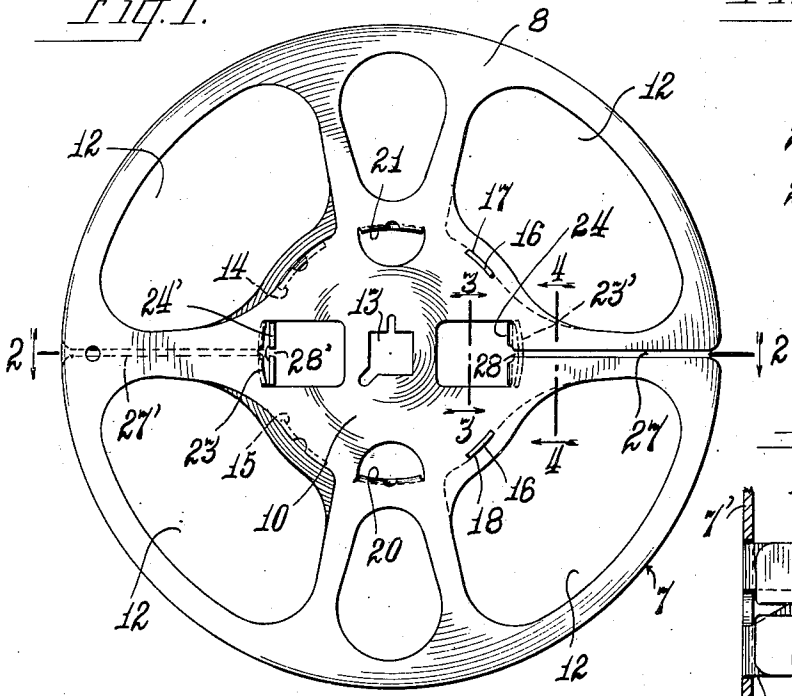


Fig. 5.

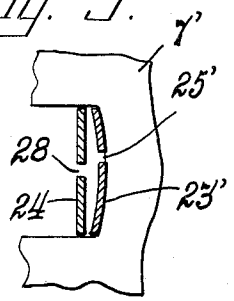


Fig. 3.

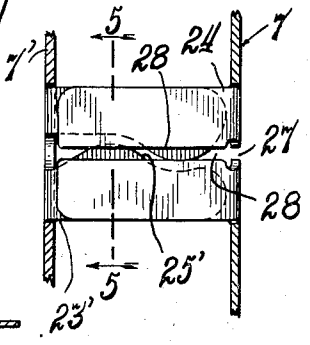


Fig. 2.

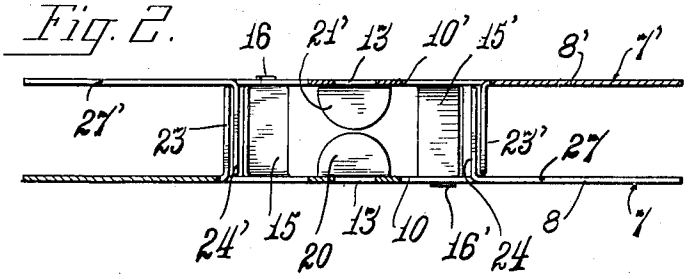


Fig. 4.

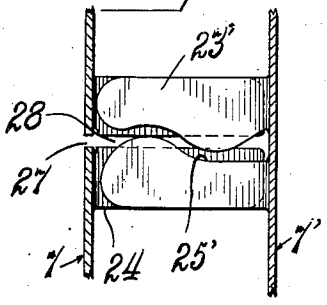
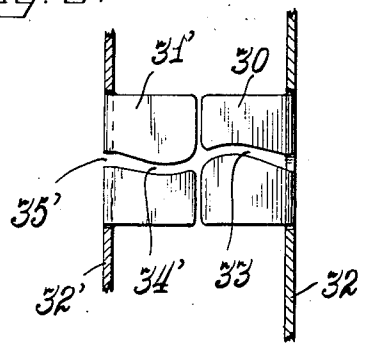


Fig. 6.



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FILM REEL CONSTRUCTION

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6 Claims. (Cl. 242—74)

1

This invention relates to spools or reels and more particularly to reels of the type used with motion picture films.

One of the objects of this invention is the provision of a reel for film on which the film is easily and conveniently secured to the hub of the reel for winding thereon and from which the film may be withdrawn after unwinding, without danger of injury to the film.

Another object of this invention is the provision, in a reel, of means relying on the inherent resilience of the film to maintain adequate frictional contact with the hub of the reel to secure the film thereto against accidental displacement.

A further object of this invention is the provision of a two piece reel construction in which the companion reel sections are identical in construction and easily assembled in a convenient manner.

A still further object of this invention is the provision of a reel of the character set forth, which is strong, sturdy, simple in construction and inexpensive to manufacture.

Other and further objects of the present invention will be apparent from the following description and claims and are illustrated in the accompanying drawing which, by way of illustration, shows a preferred embodiment and the principle thereof. Other embodiments of the invention embodying the same or equivalent principle may be used and structural changes may be made as desired by those skilled in the art without departing from the present invention and a purview of the appended claims.

In the drawing:

Fig. 1 is a front elevational view of a reel embodying my invention.

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

Fig. 3 is an enlarged cross-sectional view taken on line 3—3 of Fig. 1.

Fig. 4 is an enlarged cross-sectional view taken on line 4—4 of Fig. 1.

Fig. 5 is an enlarged cross-sectional view taken on line 5—5 of Fig. 3.

Fig. 6 is an enlarged fragmentary view of a detail partially in section.

Referring to the drawing, the reel illustrated comprises two identical companion sheet metal stampings, indicated generally by the numerals 7 and 7', and formed to provide flanges 8 and 8', each having a hub portion 10 and 10'. Since the companion stampings are identical in construction only one will be described, with primed reference numbers used to identify corresponding parts of the companion stamping.

In the preferred embodiment of my invention, openings 12 are stamped out of each flange to reduce weight without impairing the rigidity.

2

Each stamping is formed with an opening 13 for receiving a spindle. Two lugs 14 and 15 are struck out of the flange 8 and are bent out of the plane of the flanges at right angles thereto to support the film when the latter is wound thereon, and to provide a portion of the hub structure. Projections 16, 16 are provided at the ends of the lugs 14 and 15 and are adapted to be received in registering apertures provided in the companion stamping 7'. The projections 16, 16 and corresponding projections such as 16' of complementary lug 15' are arranged to be peened over to secure the stampings 7 and 7' in assembled relation. As will be noted, the two lugs 14 and 15 and apertures 17 and 18 in the stamping 7 are spaced radially about 90° apart, the lugs 14 and 15 being located in one half of the hub circle and the apertures 17 and 18 in the other half. Two semi-circular tabs 20 and 21, arranged on a diametrical line and struck from the stamping 7, are bent at right angles to the plane of the flange 8 and, when in juxtaposed relation to corresponding tabs such as 21', illustrated in Fig. 2, of the companion stamping 7', are arranged to provide additional platform surfaces to support the wound film.

Tabs 23 and 23' are struck out of the hub portions of the companion stampings 7 and 7' and are bent inwardly to provide film supporting platform surfaces. The tabs 23 and 23' are provided with slots such as 25', each defining substantially an ogee curve, as is shown in Figs. 3 and 4. The terminal portions of the tabs 23 and 23' are suitably rounded in contour to provide an enlarged mouth opening for the ogee curved slot.

Tabs 24 and 24' are struck out of the hub portions of the stamping 7 and 7' in a diametrical line with the tabs 23 and 23' and are bent inwardly in planes to underlie tabs 23' and 23 respectively of the companion stampings. The tabs 23 and 23' are spaced from tabs 24' and 24 respectively, as shown in Figs. 2 and 5. The stampings 7 and 7' are provided with slots 27 and 27' extending radially from the marginal edges of the flanges 8 and 8' to the hub portions and connecting with straight slots 28 and 28' of the tabs 24 and 24' respectively. As is shown in Figs. 1 and 5, the ogee curved slot 25' of tab 23' is arranged above the straight slot 28, so that when viewed in plan, either as in Fig. 3 or Fig. 4, the rounded edges of the ogee curved slot 25' align with opposite edges of the straight slot 28 or slightly overlap the same.

As was previously noted, each of the stampings 7 and 7' are identical in construction, but in assembly, the stampings are turned 180° relative to each other, so that tab 23 overlies tab 24' and tab 23' overlies tab 24. The ogee curved slots 25 and 25' are arranged over the slots 28' and 28 respec-

tively, in the relative positions shown in Figs. 3 and 4 and, as will be presently described, cooperate to secure therebetween a film end against accidental displacement.

To connect the reel to the film for winding, the film is grasped at a distance from the end slightly greater than the length of the radial slots **27** or **27'** and is inserted laterally in either slot, depending upon which flange is more conveniently presented for use, with the end portion of the film entering into the connecting slots such as **25'** and **28** and being deformed thereby across the width of the film substantially in ogee configuration. The inherent resilience of the film particularly, when deformed as above described, urges the film surfaces in contact with the walls of the slots **25'** and **28** to afford the necessary frictional engagement to prevent withdrawal of the film during the initial stages of the winding operation, but is yet sufficiently yieldable to permit withdrawal of the film from the slots without injury to the film.

In Fig. 6 is shown a modified embodiment employed preferably in reels of smaller capacity than those hereinabove described, and particularly wherein the hub dimensions are such as to preclude striking out tabs of sufficient length to extend substantially across the width of the reel. In this modified embodiment, complemental tabs **30** and **31'** are struck out of the companion stampings **32** and **32'** and are bent inwardly towards each other to form a film supporting platform portion. As is shown in Fig. 6, the tabs **30** and **31'** terminate on a line substantially midway between the flanges of the stampings. The tabs **30** and **31'** are provided with curved slots **33** and **34'** respectively which together assume substantially an ogee curve. The slot **34'** connects with a radial slot **35'** in the stamping **32'** which similarly to the radial slot **27**, shown in Fig. 1, extends from the marginal edge of the flange to the hub portion of the stamping. The balance of the reel structure is identical with that described and the film is connected to the reel for winding in the same manner hereinbefore described.

It will be seen from the foregoing that an effective securement of the film end for winding on the reel is accomplished in a minimum amount of time, and with a minimum of effort. In view of the provision of duplicate structure on each side flange stamping, a slot is conveniently available to the user for beginning the winding of the film regardless of which side is presented to view when the reel is picked up for use.

I claim:

1. A film reel comprising a pair of substantially identical complemental members, each having a flange and hub portion, a tab struck out of one of said members and extending substantially across the width of the reel, the complemental member having a radial slot connecting with a slot in said tab, the said slots being arranged to receive a film laterally and to deform the terminal portion of the film substantially in an ogee curve to secure the same for winding on the reel.

2. A film reel comprising a pair of complemental members, each having a flange and hub portion, a tab associated with the hub portion of one of said members and extending substantially across the width of the reel, the complemental member having a radial slot connecting with a slot in said tab, the said slots being arranged to receive a film laterally and to deform the terminal portion of the film substantially in an ogee curve to secure the same for winding on the reel.

3. A film reel comprising a pair of flanges and a hub portion, one of said flanges having a radial slot extending from the hub portion to the marginal edge thereof and arranged to receive a film laterally, said hub portion having a film supporting platform, said platform having a slot substantially in an ogee curve and extending substantially across the width of the reel and connecting with said radial slot, the said film when received in said slots being deformed at the terminal portion and releasably secured for winding on the reel.

4. A film reel comprising a pair of substantially identical members, each having a flange and a hub portion, one of said members having a radial slot extending from the hub portion to the marginal edge thereof and arranged to receive a film laterally, a tab struck out of each of said members and arranged to extend substantially across the width of the reel with one of said tabs overlying the other of said tabs and spaced therefrom, each of said tabs having slots extending substantially across the width of the reel and connecting with said radial slot and arranged when a film is received therein to deform the terminal portion of the film to releasably secure the same for winding.

5. A film reel comprising a pair of substantially identical members, each having a flange and a hub portion, one of said members having a radial slot extending from the hub portion to the marginal edge thereof and arranged to receive a film laterally, a tab struck out of each of said members and arranged to extend substantially across the width of the reel with one of said tabs overlying the other of said tabs and spaced therefrom, the upper of said tabs having a slot substantially in an ogee curve and the lower of said tabs having a slot substantially straight, each of said slots connecting with said radial slot and when a film is received therein arranged to deform the terminal portion of the film substantially in an ogee curve thereby to secure the film for winding.

6. A film reel comprising a pair of flanges and a hub portion, one of said flanges having a radial slot extending from the hub portion to the marginal edge thereof and arranged to receive a film laterally, said hub portion having a film supporting platform extending substantially across the width of the reel, said platform having a slot substantially in an ogee curve and connecting with said radial slot, a tab disposed below said platform and connected to said hub portion, said tab having a slot extending substantially across the width of the reel and connecting with the said radial slot, said slots when a film is received therein arranged to deform the terminal portion of the film to releasably secure the same for winding.

WHITTEN P. LLOYD.

REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
1,353,901	Fulton	Sept. 28, 1920
1,408,425	Passavanti	Feb. 28, 1922
1,469,818	Robertson	Oct. 9, 1923
1,856,112	Porter	May 3, 1932
2,203,101	Pausin	June 4, 1940