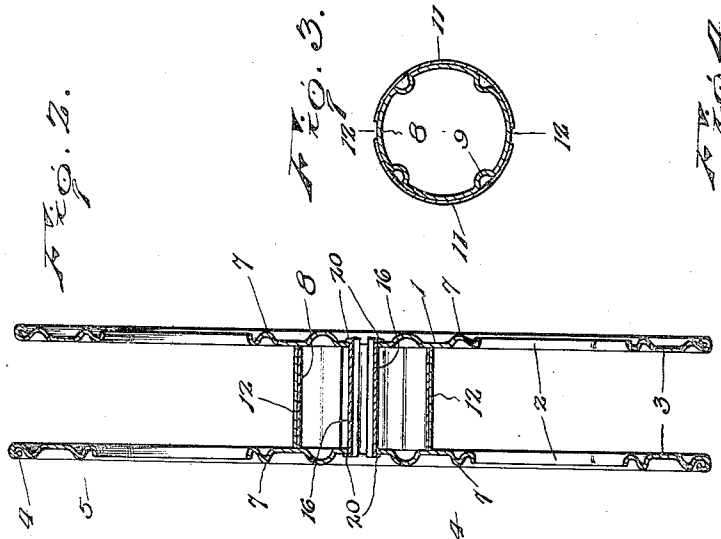
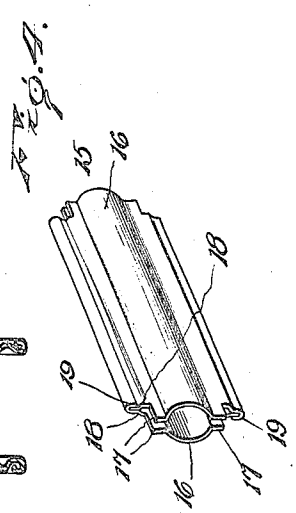
W. F. GAMMETER.

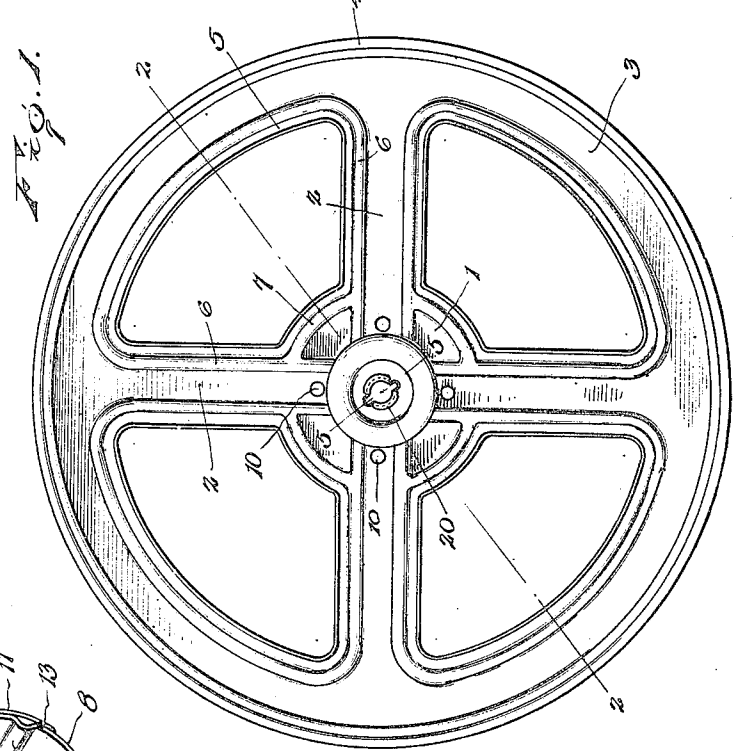
FILM REEL.

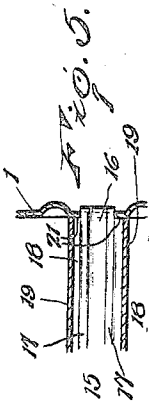
APPLICATION FILED JULY 12, 1921.

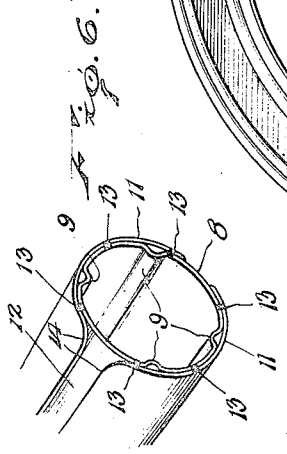
1,417,313. Patented May 23, 1922.











Inventor

William F. Gammeter.

By Lacey & Lacey. Attorneys

UNITED STATES PATENT OFFICE.

WILLIAM F. GAMMETER, OF CADIZ, OHIO.

FILM REEL.

1,417,313. Specification of Letters Patent. Patented May 23, 1922.

Application filed July 12, 1921. Serial No. 484,232.

To all whom it may concern:

Be it known that I, WILLIAM F. GAMMETER, a citizen of the United States, residing at Cadiz, in the county of Harrison and State of Ohio, have invented certain new and useful Improvements in Film Reels, of which the following is a specification.

This invention is a reel for carrying moving picture films and has for its object the provision of a strong and durable reel which may be produced at a very low cost and in which the film end may be easily engaged without damage to the film. The invention resides in certain novel features which will be particularly pointed out in the claims following a detailed description and which are illustrated in the accompanying drawings.

In the drawings—

Figure 1 is a side elevation of a film reel constructed in accordance with my invention;

Fig. 2 is a section on the line 2—2 of Fig. 1;

Fig. 3 is a detail section through the hub;

Fig. 4 is a detail perspective view of the tube providing a key-way through the hub to facilitate the mounting of the reel upon a winding machine; Fig. 5 is a detail section on line 5—5 of Fig. 1;

Fig. 6 is a detail perspective of one end of the hub.

The reel consists essentially of a hub to which the end of the film is attached, and side plates or flanges carried by the ends of the hub. Each side plate consists of a spider presenting a central disc-like portion 1 having a central opening to receive the end of the key-way tube hereinafter described, spokes or radial arms 2 extending from the central disc 1, and an annular rim portion 3 connecting the outer ends of the spokes or radial arms. The spider is formed from sheet metal and may be readily produced in a stamping machine, and the outer circular edge of the rim 3 is rolled upon itself to produce a bead 4 which will reinforce the rim and resist buckling thereof as well as present a smooth surface to the edge of the film so that cutting of the film will be avoided. A bead 5 is also produced adjacent the inner edge of the rim and this bead 5 is continued along the spokes adjacent the edges thereof, as shown at 6. The straight portions 6 of the bead are extended partly over the central disc 1 and are connected adjacent their inner ends by a third bead 7 concentric with and adjacent the edge of said disc. The entire spider is thus effectually reinforced so that it will resist the tendency to buckle and cutting of the film edge will be avoided. The hub consists of an inner sheet metal cylindrical shell 8 adapted at its ends to abut the inner faces of the side members and constructed longitudinally with internal ribs 9 presenting exterior grooves through which may be passed rivets 10 to connect the side members so that the said side members and the hub will be securely joined. The hub also comprises a split outer shell consisting of two similar sheet metal plates 11 each of which defines, in cross section, nearly a semi-circle, the longitudinal edges of the said plates being spaced apart, as shown at 12, to present an opening through which the end of the film may be inserted. The outer shell members are secured to the inner shell at any convenient points by spot welding, as indicated at 13, and they extend over the grooves presented by the interior ribs 9 so that the rivets 10 will be housed and shifting of the hub across the rivets will be positively prevented. The longitudinal edges of the outer shell members are free of the inner shell and may be resilient so that the end of a film inserted under either free edge will be securely held between the two members of the hub without the use of any puncturing members or other fastening devices which might injure the film. To further guard against cutting or other injury to the film end, the corners of the outer hub members are rounded off, as indicated at 14. It will be readily noted that this construction renders it unnecessary to observe any particular care in bringing the end of the film into engagement with the hub as the outer hub members present four film end-engaging lips or holding elements so that in order to bring the film into proper relation to the hub of the reel, it is only necessary to dispose the end of the film between the side members of the reel.

A central key-way tube 15 is provided within the hub and this key-way member consists of two similar plates of sheet metal stamped to provide a central approximately semi-cylindrical portion 16 from the sides of which extend straight flanges 17 which,

when the two plates are assembled, will be parallel with each other and out of contact, thereby presenting a passage or key-way to receive the key on the spindle of the winding machine, and it will be noted that a key-way or passage is provided at both sides of the member so that either side of the tube may be caused to engage the key on the winding machine. The longitudinal edges of the plates are extended beyond the flat straight portions 17, as shown at 18, and one of these extending portions 18 is longer than the other and is adapted to be rolled or folded over the edge of the said shorter portion, as shown at 19, so that the two plates will be effectually joined together. It will also be noted that the holding flange 19 at one side of the key-way tube is reversed relative to the holding flange at the other side of the tube, this arrangement being due to the fact that each blank or member has one short longitudinal projection 18 and one long longitudinal projection 18 so that both members may be produced in a single machine, and, when they are assembled, the strain will be distributed so that it may be more effectually resisted and separation of the parts effectually prevented. Upon reference to Fig. 4, it will also be noted that the said projecting flange portions 18 are shorter than the flat rib portions 17 and the terminals of the projections 18 consequently present shoulders 21 which may abut the inner faces of the disc members 1, as shown in Fig. 5, and thereby aid in holding the said disc members against buckling inwardly as well as prevent endwise movement of the tube in the assembled reel. To further prevent withdrawal of the key-way tube or sleeve and to prevent spreading of the central disc members of the side plates, the projecting ends of the semi-cylindrical portions 16 and the flat straight ribs 17 are upset against the outer faces of the disc 1, as shown at 20. It will thus be seen that I have provided a very simple and inexpensive construction which will effectually prevent distortion of the side members of the reel and which will facilitate the engagement of the film end with the hub for the purpose of winding, and the reel may be very easily and quickly engaged upon the spindle of the winding machine.

Having thus described the invention, what is claimed as new is:

1. A film reel comprising side plates, and a hub disposed between the side plates at the centers thereof and consisting of an inner shell, and outer shell members permanently secured at their ends to the inner shell and having their longitudinal edges free of the inner shell whereby a film end may be engaged between the hub members and held without bending.

2. A film reel comprising side plates, a hub disposed between and abutting the side plates at the centers thereof and consisting of an inner cylindrical shell having internal ribs stamped therein, outer arcuate plates secured at their ends to the ends of the said shell and bridging the outer sides of said internal ribs, and fastening devices housed between the said ribs and the said arcuate plates and having their ends secured in the side plates.

3. A film reel comprising side plates, a hub secured between the side plates, and a sleeve fitted through the hub and the side plates at the axis of the hub to engage a winding spindle, said sleeve comprising two similar mating plates defining a central circular portion to engage the winding spindle, flat-sided passages along the said central cylindrical portion to engage a key on the winding spindle, and interlocking longitudinal flanges beyond the said flat-sided portions.

4. A film reel comprising side plates, a hub disposed between and secured to the side plates, and a member arranged at the axis of the hub to engage a winding spindle, said member consisting of mating plates each having a central longitudinal arcuate portion, flat longitudinally extending portions at the edges of said arcuate portion coterminous with the arcuate portion, and longitudinal flanges projecting from the said flat portions and terminating short of the ends thereof, the said longitudinal flange at one side of the plate being longer than the longitudinal flange at the other side of the plate and the longer flange of one plate being engaged over and around the shorter flange of the mating plate.

In testimony whereof I affix my signature.

WILLIAM F. GAMMETER. [L. S.]