L. S. BALUTA.

REEL.

APPLICATION FILED JULY 19, 1920.

1,438,212.

Patented Dec. 12, 1922.

2 SHEETS—SHEET 1.

Fig. 1.

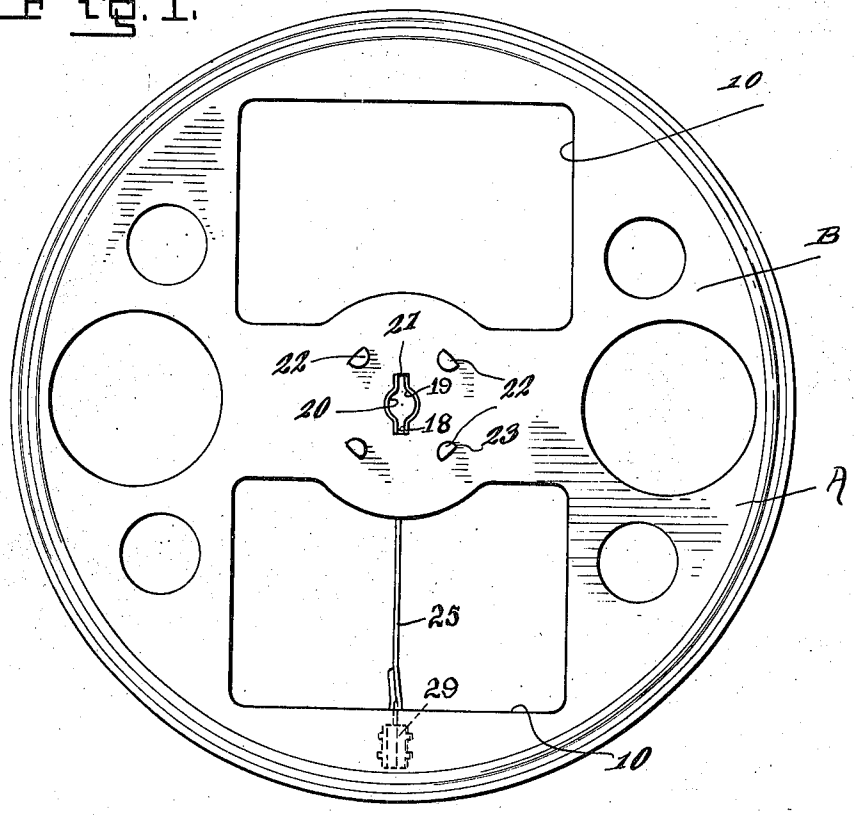
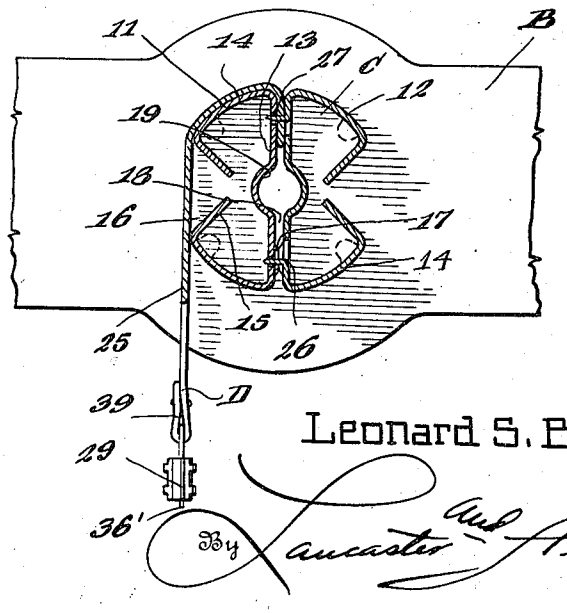


Fig. 3.



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2 SHEETS—SHEET 2.

Fig. 2.

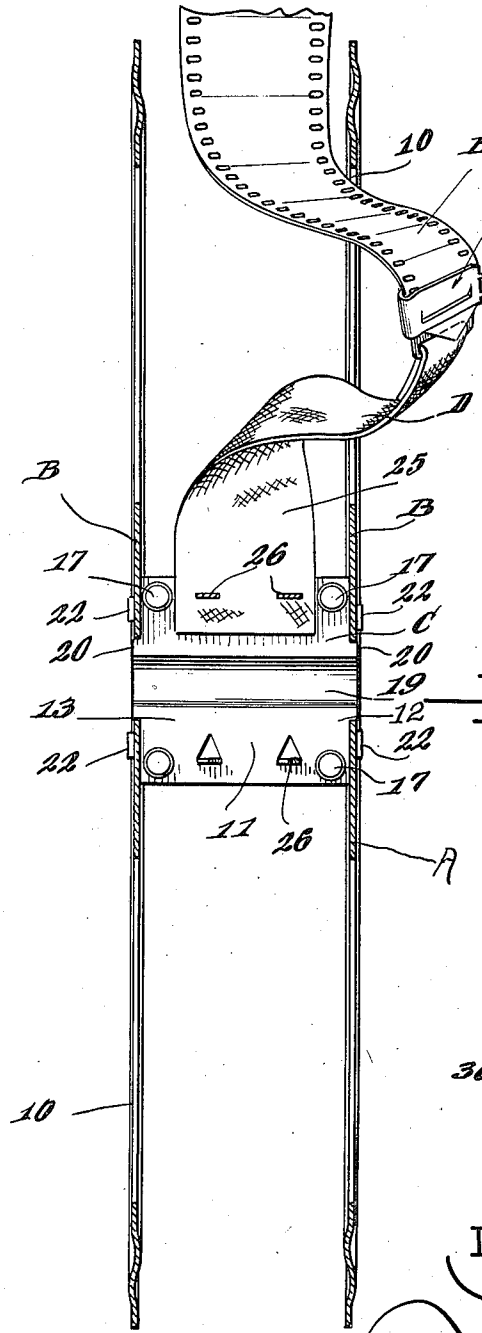


Fig. 4.

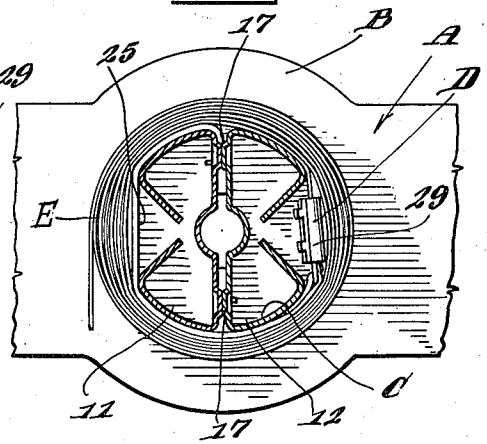


Fig. 5.

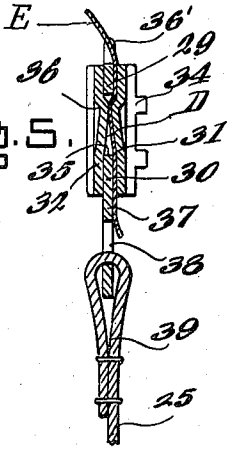
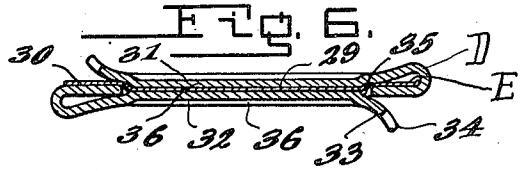


Fig. 6.



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UNITED STATES PATENT OFFICE.

LEONARD S. BALUTA, OF BERWICK, PENNSYLVANIA.

REEL.

Application filed July 19, 1920. Serial No. 397,294.

To all whom it may concern:

Be it known that I, LEONARD S. BALUTA, a citizen of the United States, residing at Berwick, in the county of Columbia and State of Pennsylvania, have invented certain new and useful Improvements in Reels, of which the following is a specification.

This invention relates to motion picture film reels and attachments therefor, and is an improvement of my Letters Patent #1,232,753 issued to me July 10, 1917, and one of the prime objects of the present invention is to provide an improved reel embodying a novel type of hub and flanges, whereby the film can be readily and quickly attached thereto irrespective of the position of the reel.

Another prime object of the invention is to provide an improved means of forming the hub for receiving and holding the flexible element carrying the film clasp whereby the same will be effectively held in position against displacement and eliminate the necessity of providing any extraneous means for attaching the flexible element to the hub.

A further prime object of the invention is to provide a reel including side flanges having relatively large symmetrically arranged openings stamped therein for permitting the easy insertion of the operator's hand in the reel, and to lighten the weight of the reel to permit the easy handling and shipping thereof, and a novel hub structure formed from a pair of sections, which can be struck with a single stamping operation from the portions of the metal struck from the flanges to form the openings therein.

A further object of the invention is to provide a novel two part reel hub having means formed thereon for spacing the parts or sections to form a pair of diametrically opposed key ways, the meeting faces of the sections having struck out tongues for engaging the flexible clamp carrying element to hold the same in position, the sections also having openings for receiving the tongues so as to prevent the slipping of the flexible element from off of the tongues.

A further object of the invention is to provide an improved means for forming the hub sections so as to permit the film clasp to lie flush with the periphery thereof, and thus eliminate all projecting portions on the hub which would tend to bulge the various convolutions of the film.

A further object of the invention is to provide an improved means for attaching the film to the reel, which means permits the use of a relatively short flexible element carrying the spring clasp which eliminates the necessity of coiling the flexible element around the hub a number of times.

A still further object of the invention is to provide an improved moving picture film reel of the above character, which is durable and efficient in use, one that is simple and easy to manufacture, and one which can be placed upon the market at a reasonable cost.

With these and other objects in view, the invention consists in the novel construction, arrangement and formation of parts as will be hereinafter more specifically described, claimed and illustrated in the accompanying drawing, forming a part of this specification, in which drawings:

Figure 1 is a side elevation of the improved reel.

Figure 2 is a diametric section through the same showing the method pursued in attaching the film end to the film clamp carried by the flexible element.

Figure 3 is an enlarged vertical section through the reel and hub illustrating the means for attaching the flexible element carrying the film clamp to the hub.

Figure 4 is a similar view of the flexible element and film coiled around the hub and illustrating the position of the film receiving clasp when the same is in operative position.

Figure 5 is an enlarged sectional view through the improved clasp used in connection with the reel.

Figure 6 is an enlarged transverse sectional view through the clasp.

Referring to the drawings in detail, wherein similar reference characters designate corresponding parts throughout the several views, the letter A generally indicates the improved reel, which includes the side flanges B and the hub C, and D designates the attaching means for the film E.

The reel flanges B are of disc like configuration and are preferably formed of sheet metal and are provided on opposite sides of the axial center thereof with diametrically opposed relatively large openings 10. The openings 10 are of substantially rectangular configuration and are formed sufficiently large so as to permit the easy insertion of the hand of the operator into the reel and to also lighten the weight of the reel so as

to permit the easy handling and shipping thereof. The metal taken from the openings 10 is utilized to form the hub C which will be hereinafter more fully described. It thus can be seen that all of the metal is utilized thereby eliminating all waste of material. The side flanges B are otherwise formed similar to the usual flanges of a motion picture reel.

The hub C of the reel A is preferably formed of two companion sections 11 and 12, which as stated, are formed from the metal taken from the openings 10. This metal is stamped to provide a body portion 13 and arcuately curved flanges 14. The terminals of the flanges 14 are bent inwardly toward each other as at 15. This provides a space 16 intermediate the flanges the purpose of which will be hereinafter more fully described. The body portions 13 of the hub sections 11 and 12 are adapted to be positioned in parallel relation to each other and are provided with pairs of struck in tits 17 which space the body portions 13 so as to provide diametrically opposed keyways 18 on the opposite sides of the semi-cylindrical barrels 19 which provides the opening for receiving the supporting shaft (not shown). The opposite ends of the body portions 13 are provided with outwardly extending lugs 20 which are adapted to fit in T-shaped openings 21 formed in the side flanges B at the axial center thereof. If so desired these lugs may be upset, so as to hold the hub sections and guide flanges in correct relation. However, the arcuate flanges 14 are also provided with outwardly extending bendable tongues 22 which are inserted through openings 23 formed in the side flanges. After the tongues 22 have been inserted in the openings 23 the same are bent over as clearly shown in Figures 1 and 2 of the drawings.

The hub sections 11 and 12 are adapted to receive between the body portions 13 thereof the flexible strip or tape 25 which forms a portion of the film holding member D which will be hereinafter more fully described. To hold the inner end of the flexible tape or strip 25 between the body portion 13 of the hub sections 11 and 12, the hub sections are provided with struck out right angularly extending pointed penetrating tongues 26 which are adapted to extend through the flexible tape or strip 25. The body portion 13 of the hub section which is not provided with the struck out prongs is provided with openings 27, which are adapted to receive the tongues so as to prevent displacement of the flexible strip or tape therefrom.

The film holding device D is similar to the device shown in my prior patent with the exception that the flexible tape 25 is formed shorter so that the necessity of coiling the same around the hub a number of times is eliminated. The shortening of the flexible ribbon or tape 25 is permitted owing to the fact that the openings 10 are sufficiently large to permit the convenient placing of the operator's hand therein and in actual use, the ends of the tape carrying the film clasp 29 is drawn through one of the openings 10 with the inner end of the film E as clearly shown in Figure 2 of the drawings. This permits the convenient attaching of the inner end of the film to the clasp. The clasp is also of novel construction and as shown is of S-shaped configuration and includes the body portion 30 and the folded spring tongues 31 and 32. The spring tongues 31 and 32 engage the opposite faces of the body plate 30 and are formed by bending the opposite end of the plate back upon itself. The free terminals of the spring tongues 31 and 32 are bent outwardly as at 33 and provided with a plurality of equi-distantly spaced prongs 34 which are adapted to engage in the usual openings formed in the side of the film. The prongs 34 formed one of the gripping members for the film. The body portion 30 of the clasp is provided with a longitudinally extending slot 35 and each of the spring tongues 31 and 32 are provided with struck in longitudinally extending ears 36 which are adapted to lie within the slot. One of the longitudinal edges of the body plate 30 is provided with a pair of outwardly extending prongs 36′ which form the second means for engaging the film to prevent the displacement thereof. These prongs 36′ are also adapted to engage in the film opening. The opposite edge of the body plate 30 is provided with an extension 37 which is provided with an opening 38 and this slot is adapted to receive the folded end 39 of the flexible strip or ribbon 25. The folded end of the flexible strip or ribbon is sewed or otherwise secured together. In placing the end of the film in position on the clasp, one end of the same is slid between one of the flexible wings or tongues 31 and 32 and the body plate 30 and the extending ears 36 are adapted to firmly engage the same and clamp the film between the walls of the slot and the ears. This forms the first means for firmly holding the film in position, and as the same is drawn outwardly the prongs 36′ will engage in the film opening and serve as a second means for holding the film against displacement. When the film is wound around the hub section the prongs 34 will engage in the film opening and thus form a third means for preventing the disengagement of the film end from the clamp. The clasp 29 is formed alike on opposite sides and thus the same is reversible and permits the film to be wound in either direction upon the hub. The space 16 between the wings 15 is adapted to re-

ceive the clasp 29 so that the same can lie flush with the periphery of the hub. This is an important feature, as all protruding parts on the hub are eliminated and the film is permitted to be evenly wound on the hub without any bulges therein.

The film reel is adapted to be placed upon the market with the film attaching member D secured thereto and it can be seen that the convenient means of attaching the film end thereto will readily appeal to moving picture machine operators as considerable time and labor will be saved in attaching the film thereto. The cheapness of construction of the reel will also appeal to a manufacturer as the same can be placed upon the market at a slight cost and still leave a good margin of profit.

Changes in details may be made without departing from the spirit or scope of this invention; but,

I claim:

1. A reel comprising rigid side flanges, and a sectional hub divided diametrically, means connecting the sections of the hub rigidly with the side flanges, and means formed on the inner portions of the sections to hold the sections in spaced relation to form a key way.

2. A reel comprising rigid side flanges and a sectional hub divided diametrically, means connecting the sections of the hub rigidly with the rigid side flanges, means formed on the meeting faces of the sections of the hub to hold the same in spaced relation to form diametrically extending ways, and penetrating prongs formed on the portions of the hub extending into said way.

3. A hub for reels constructed of sheet metal comprising a pair of companion sections, each forming a sector of a circle, each section including a straight inner wall, and inwardly extending arcuate flanges, the flanges terminating short of each other.

4. The combination with a motion picture reel including side flanges and a hub, of a film attaching device therefor including a flexible strip, means for securing the inner end of the flexible strip directly to the hub, the hub having diametrically opposed recesses formed in the periphery thereof, and a film engaging clip carried by the outer end of the flexible strip and arranged to fit in either one of said recesses.

5. The combination with a motion picture reel including side flanges and a hub, the hub having diametrically opposed indentations formed in the periphery thereof, of a film attaching device therefor including a flexible strip, means carried by the hub for receiving the inner end of said strip, and a reversible resilient film engaging clip carried by the outer end of the flexible strip and arranged to fit in either one of said indentations.

6. The combination with a motion picture reel including side flanges and a two-part hub, means connecting the parts of the hub and the side flanges together, penetrating prongs carried by the inner faces of the hub sections, of an attachment for the reel including a flexible strip having one end interposed between the hub sections and engaged by said penetrating prongs, and a resilient film engaging clip carried by the outer end of the flexible strip.

7. The combination with a motion picture reel including side flanges and a hub, the hub having two companion sections, means for spacing the sections in relation to each other, penetrating prongs carried by the facing sides of the sections, the sections also having openings to receive the penetrating prongs, of an attachment for the reel including a flexible body arranged between the hub sections and receiving said prongs, and a double resilient film engaging clip carried by the flexible strip.

8. The combination with a motion picture film reel including side flanges and a two part hub, the hub sections each being formed from a single blank of material and bent to provide body portions, and arcuately extending wings, the wings terminating in spaced relation and provided with inwardly extending flanges, inwardly extending abutting tits formed on the body portions of the hub sections spacing the same from each other, struck out penetrating prongs carried by the hub sections, of a film attaching device including a flexible strip interposed between the body portion of the hub sections and receiving said penerating prongs, and a double resilient film engaging clip carried by the outer end of the flexible strip and arranged to lie between the spaced arcuate wings formed on the hub section.

9. A motion picture reel comprising disc shaped side flanges, and a two part hub, the axial center of said side flanges being provided with aligned openings, the walls of the openings having diametrically extending notches therein, the flanges also having slots formed therein arranged to surround said axial openings, the hub sections each including a body portion having a centrally disposed semi-cylindrical way therein, arcuate wings terminating in spaced relation to each other, and inwardly extending flanges, the body portions having inwardly extending abutting tits arranged to space the body portion in relation to each other, penetrating prongs carried by the body portions, and bendable tongues formed on said wings and arranged to fit in said openings formed around the axial openings.

10. In construction of the general nature of that herein described, in combination, a pair of head members, and a barrel comprising a pair of members each of which is se-

cured to both of said head members and each of which comprises a circular supporting portion and a substantially diametrical portion, said diametrical portions being spaced one from another throughout their length and being curved away from each other at their centers to form a center bearing for the reel.

11. In construction of the general nature of that herein described, in combination, a pair of head members, and a barrel comprising a pair of members each of which is secured to both of said head members and each of which comprises a circular supporting portion and a substantially diametrical portion, said diametrical portions being spaced one from another throughout their length and being curved away from each other at their centers to form a center bearing for the reel, and said heads having perforations substantially registering with said center bearing and having a keyway extending in the direction of the spaced portions of said barrel members.

LEONARD S. BALUTA.