Dec. 29, 1936. R. S. GAVIN 2,065,575

FILM REEL

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Fig. 1.

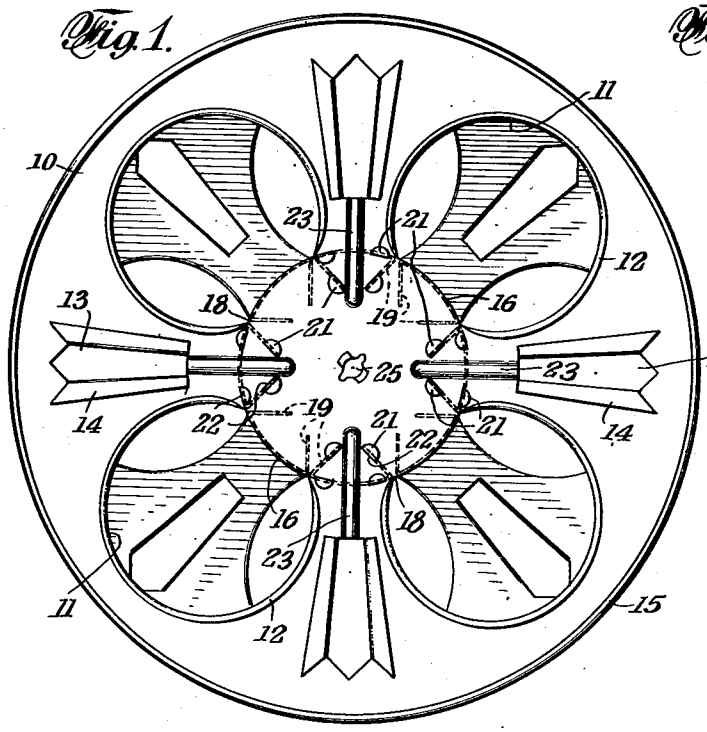



Fig. 2.

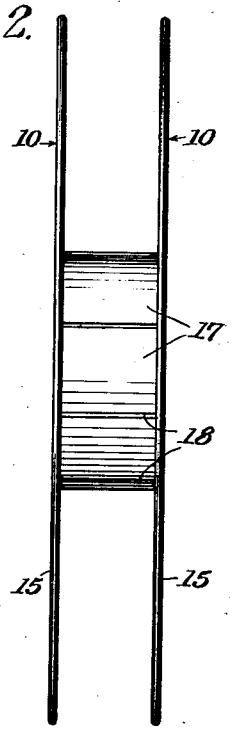
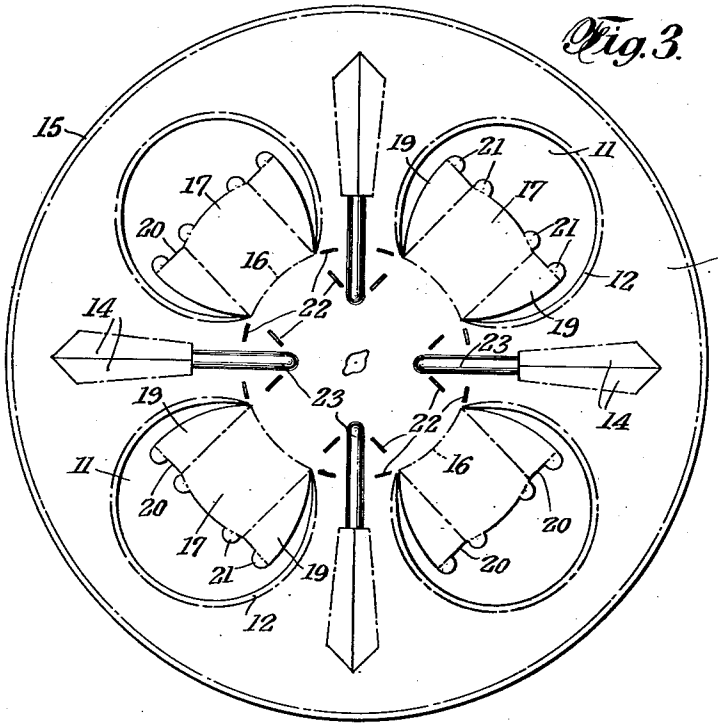



Fig. 3.




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Fig. 4.

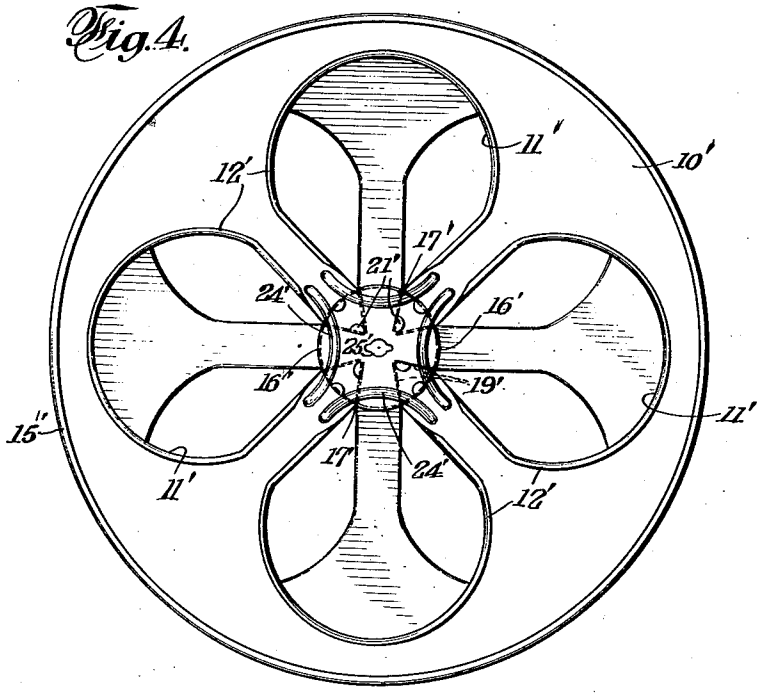
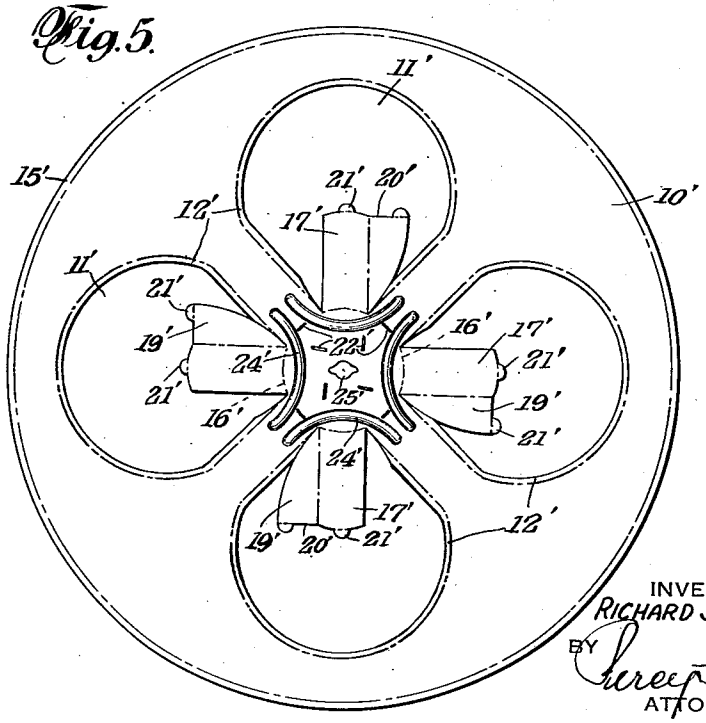



Fig. 5.




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# UNITED STATES PATENT OFFICE

2,065,575

## FILM REEL

Richard S. Gavin, Bayonne, N. J.

Application May 20, 1935, Serial No. 22,359

4 Claims. (Cl. 242—70)

This invention relates to reels for films particularly as used in the motion picture field.

Film reels, as at present constructed, usually comprise a hub portion and two circular flanged members fastened thereto. While in ordinary use reels so constructed would suffice, the parts nevertheless tend to loosen, under handling which produces great strains. When rewinding film after projection, the operator also inspects the edges of the film for breaks at the sprocket holes thereof. This operation is performed at a relatively high rate of speed, and when a break in the film is detected the operator arrests the rotation of the reel by braking, with the hand or by other means, the periphery of the flanges of the reel. This sudden arresting of the inertia of the mass of film already wound on the hub of the reel, tends to, and does, after only a short period of use, loosen the hub at its points of connection with its flanges. Further, the reels as at present constructed do not afford proper openings in the reel flanges so an operator may conveniently initially thread a film upon the hub thereof. Besides, in reels at present in use, the hub is provided with but a single slot for the reception of the end of the film, so it is necessary when desiring to engage the film with the hub, to rotate the reel to find the hub slot.

With the foregoing faults in mind, the invention contemplates the provision of a light, strong, substantially non-destructible reel capable of long life, and relatively inexpensive to manufacture.

The invention further contemplates the provision of a reel comprising two exactly similar portions, which when assembled together form a reel with integral hub sections and particularly adapted to take the strains to which it would be subjected when used in the motion picture field.

A further object is to provide a reel, the flanges of which are light, strongly made and having a plurality of offset access openings through the flanges, and a plurality of film engaging slots in the hub, thus rendering the threading of film a simple and easy operation.

The above features and objects of the invention and others later apparent, and the means for their attainment, are described in the following specification, based on the accompanying drawings, in which, by way of example, are illustrated preferred embodiments of the invention, and in which:—

Fig. 1 is a side view of a preferred form of reel constructed in accordance with the invention.

Fig. 2 is an edge view thereof.

Fig. 3 is a view of a blank from which one of the reel elements are formed.

Fig. 4 is a side view of an alternate form of contemplated construction.

Fig. 5 is a view of a blank from which one of the elements of the reel shown in Figure 4 is formed.

With reference to Figures 1, 2, and 3, the reel comprises two identical elements 10, each formed from a substantially thin, light, metallic disc. Each disc 10 is blanked out with a plurality of uniformly spaced substantially circular openings 11 of sufficient size to permit the insertion of a hand therethrough. Each of these openings is provided with a beaded edge as at 12, and alternately spaced between each two of said openings there is provided a narrow, elongated slot 13 from which the metal forming the slot is doubled back as at 14 to provide a plurality of substantially radial flanged stiffening portions as shown in Figure 1. The peripheral edge of each of the elements 10 is beaded over as at 15. These portions 12, 14, and 15 are preferably turned toward the outer face of the flange, leaving the inner face thereof smooth and clear of all projections or the like. It will be noted that the flange, as above described, is provided with proper stiffening means for strength for the obviating of bending or flexing.

Integrally formed at each of the portions 10 as along the lines 16 and disposed within the openings 11 when the element 10 is blanked, there are provided a plurality of integrally formed hub portions 17 which when bent at right angles along the lines 16 form alternate portions of a circular hub for the reel. The width of each of these portion is slightly less than the space between them so that when a similar element 10 with similar hub portions 17 is assembled therewith, all of the portions 17 comprise a cylindrical hub of uniform and regular diameter having narrow spaces 18 between any two adjacent portions 17 (Figure 2).

In order to further stiffen the reel, each of the hub portions 17 is preferably provided with wing portions 19 bent at an angle to the portion 17 and having an edge 20 adapted to impinge against the inner surface of the mating element 10 when assembled. This is best shown in Figure 1, and provides the stiffening strength-giving features contemplated in this invention.

In order to unite the two elements 10 to each

other the free ends of the hub portions 17, together with the wings of each, are provided with judiciously positioned prongs 21 enterable through slits 22 in the mating element 10 and struck over as shown in Figure 1.

To further stiffen the flange portions of the element 10, embossments 23 may be employed as shown and wherever desired.

From the foregoing it can be seen that only one set of dies is necessary for the provision of a reel as herein contemplated, all of the elements 10 being identically formed and any two of them being adapted to be assembled as shown in Figure 1 to provide a strong light substantially non-destructible reel.

It will be noted that access from the side through any of the openings 11 may readily be had for threading the end of a film into any one of the slits 18 provided between adjacent hub sections.

It will also be noted that the inner faces of both reel flanges are smooth and without projections of any kind whatsoever.

The structure as above described is particularly adaptable for reels of larger size, i. e. for the 14 in. size. While this construction may be employed for the smaller 10 in. reel, it is preferred that the smaller reel be constructed in accordance with the showing in Figures 4 and 5, wherein similar reference numerals but with prime exponents, are used to indicate similar parts.

In this form of the invention the openings 11' in the elements 10' are formed substantially as heretofore described as are the hub portions 17'.

In this instance, however, one of the winged portions 19 may be omitted as shown for the reason that the hub diameter is quite small and that sufficient bracing at that point may be attained with one wing on each of the hub portions 17', the two reel elements being united to each other in a manner similar to the one above described.

The embossments 24' in this form may be arranged along a curve to effectively stiffen the flange as shown.

In both forms of the invention a central tube adapted to engage over a spindle may be provided in the usual well known manner as shown at 25 and 25'.

It should be apparent that the construction proportions, wherever immaterial, may be varied in providing of a reel as contemplated in this invention, and for that reason the general scope of the invention as contemplated and set forth in the following claims should not be limited by the present specific disclosure but rather by the prior art.

What is claimed as new, and desired to secure by Letters Patent, is:

1. A reel comprising two identical elements each formed with a plurality of integral hub portions bent at right angles thereto, wing portions on each hub portion integrally formed and bent at an angle to the lateral edges of said hub portions, the width of each hub portion being substantially equal to the space between the adjacent integral hub portion, and prongs on the free end of each hub portion engageable in slots in the elements, the prongs of the hub portions of one element being extended through the slots in the other element to connect the elements.

2. A two-piece reel comprising identical elements, each element comprising a disc-like member having integrally formed hub portions bent at right angles thereto, the width of each hub portion being substantially equal to the space between adjacent hub portions, and at least one wing portion integrally formed with each hub portion and bent at an angle to the lateral edges of said hub portion.

3. A reel comprising two identical elements, each element comprising a disc-like member having integrally formed hub portions bent at right angles thereto, and at least one wing portion integrally formed with each hub portion and bent at an angle to the lateral edges of said hub portion.

4. A reel comprising two identical elements, each element comprising a disc-like member having integrally formed hub portions bent at right angles thereto, and at least one wing portion integrally formed with each hub portion and bent at an angle to the lateral edges of said hub portion, and a prong on one edge of each wing portion engageable in a slot in the element from which it is bent, to reinforce its respective wing portion.

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