

H. L. HILL.

FILM SPOOL.

APPLICATION FILED OCT. 19, 1909. RENEWED OCT. 6, 1910.

988,341.

Patented Apr. 4, 1911

Fig. 1.

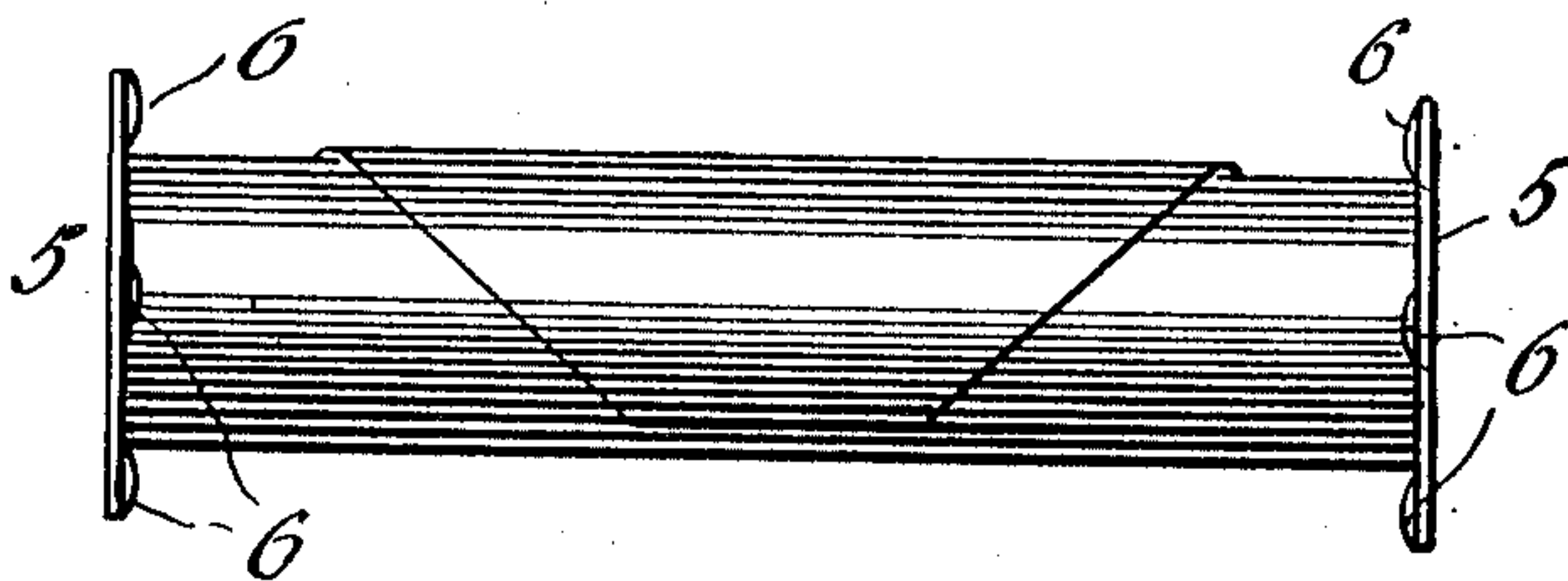


Fig. 2.

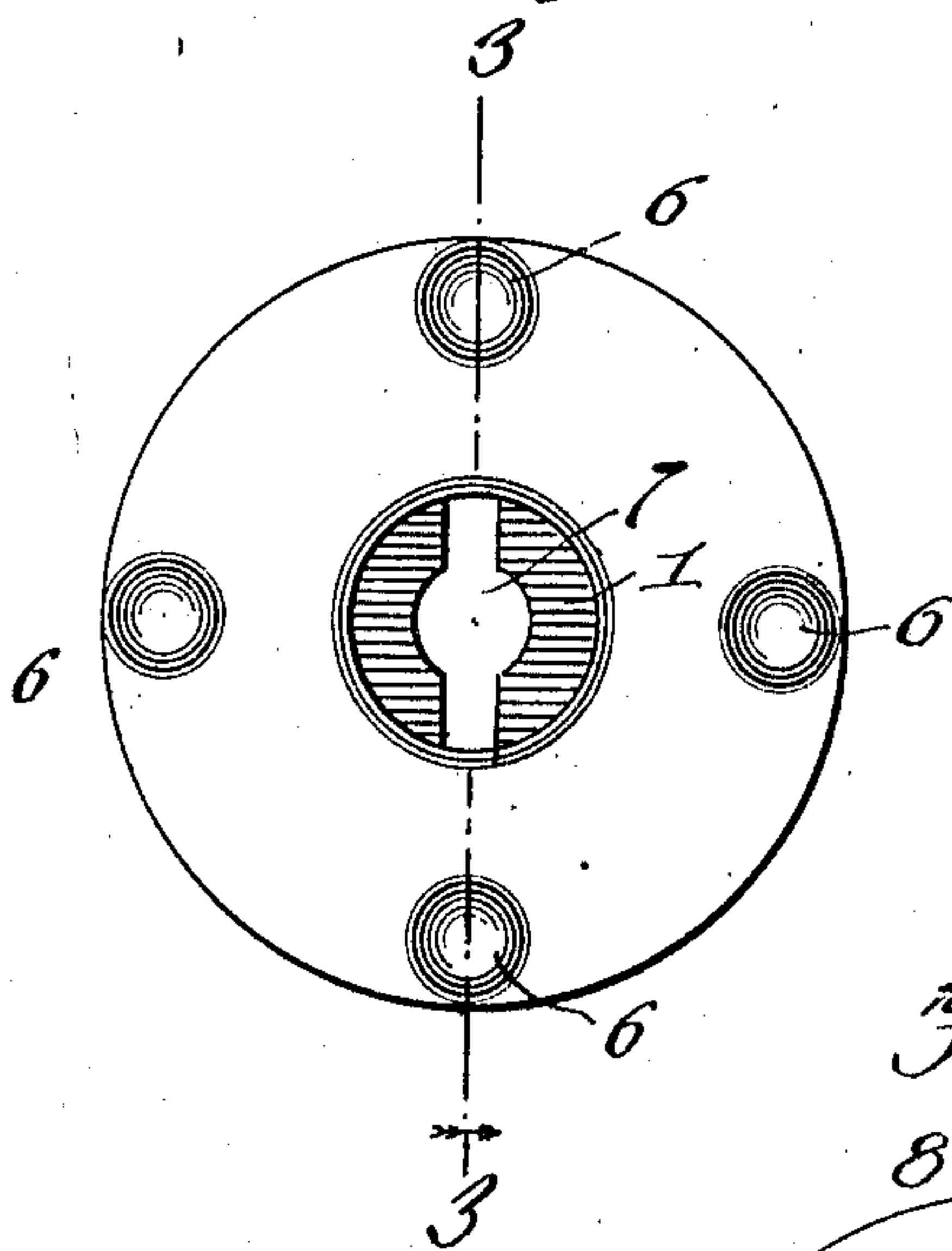


Fig. 3.

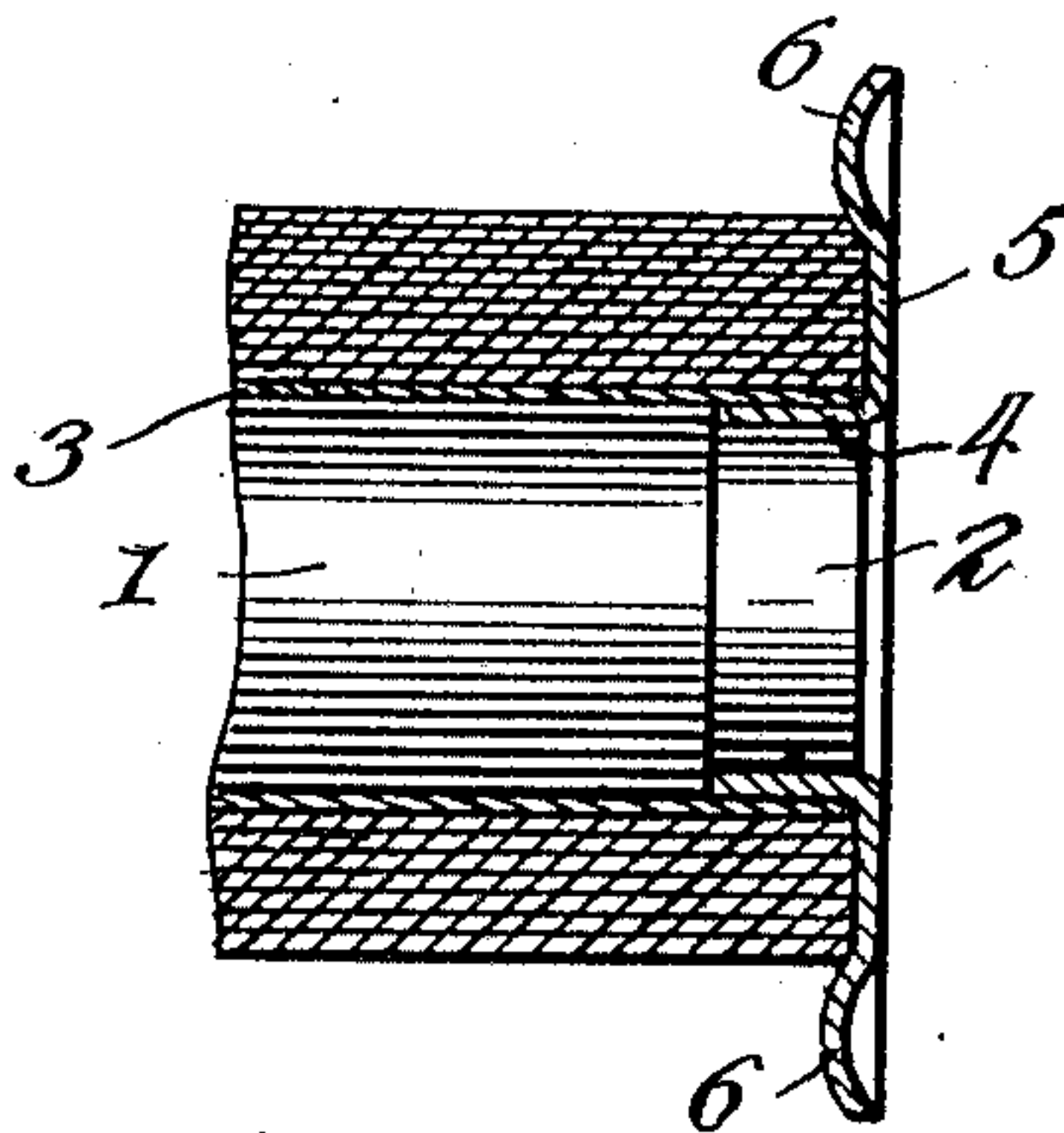
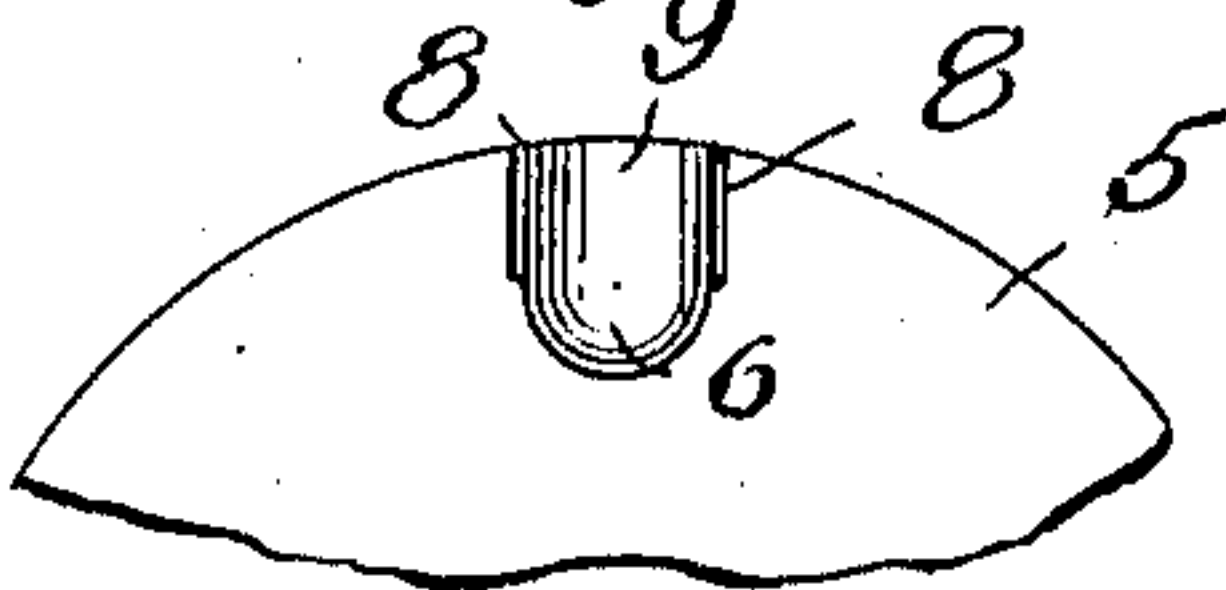


Fig. 4.



Witnesses

*Hugh Hill*

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# UNITED STATES PATENT OFFICE.

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## FILM-SPOOL.

988,341.

Specification of Letters Patent.

Patented Apr. 4, 1911.

Application filed October 19, 1909, Serial No. 523,421. Renewed October 6, 1910. Serial No. 585,705.

*To all whom it may concern:*

Be it known that I, HOWARD L. HILL, a citizen of the United States, residing at Lake Mills, in the county of Winnebago and State of Iowa, have invented new and useful Improvements in Film-Spools, of which the following is a specification.

This invention relates to certain new and useful improvements in film spools, and it consists in the novel combination, construction, and arrangement of parts as will be hereinafter more particularly described and pointed out in the claims.

In the drawings:—Figure 1 is a side elevation of my complete invention, showing the usual heavy or springy paper carried thereby between the convolutions of which is located the usual film. Fig. 2 is an enlarged end view of my complete invention with the parts properly assembled. Fig. 3 is a vertical longitudinal section taken on the line 3—3 of Fig. 2, showing one end of the spool with the parts assembled; and Fig. 4 is an end view of the spool with parts broken away showing a modification of my invention.

The object of my invention is to construct a simple and practical film spool, whereby the heavy springy paper in surrounding the same and between the convolutions of which is located the usual film is held in a compact position upon the spool and thus prevented from unfolding or fluffing about the spool thus preventing the film from being "light-struck" or practically destroyed as is a common occurrence from the film spools previously constructed all of which will appear from the detailed construction particularly with reference to the ends of the same as will be more fully set forth in the detailed description to follow.

In the drawings, 1 represents the usual wooden core extending the full length of the spool to be constructed and having reduced ends 2 located on a line with or terminating adjacent to the outside surfaces of the spool, the parts being constructed and located in a position in respect to one another as will be now described.

Surrounding the wooden core is a cylinder 3 preferably constructed of metal and located at the opposite ends of said cylinder and inserted within the latter are tubular extensions 4, the inner peripheries of which are adapted to snugly receive the reduced ends 2 of the wooden core 1 in a manner as

clearly shown in Fig. 3 of the drawings, upon which cylinder 3 the heavy or springy paper commonly employed together with the film which is adapted to be located between the convolutions of said paper is adapted to be wound in the usual manner and secured to the spool in the usual or any other well-known mechanical manner.

The inwardly projecting tubular extensions 4 of the spool preferably form an integral part of the oppositely located flat disks 5 providing the ends of the spool and formed in the inner flat surfaces of said disks or ends of the spool are rounded projecting smooth contacting surfaces 6 which are thus provided by depressing the metal sufficiently from the outside of the disks, the depression and rounded inner contacting surfaces thus formed being oppositely arranged as clearly shown in Fig. 2, the outer wrap or convolution of the heavy springy paper together with the film carried thereby being normally located below the base of said rounded projections thus formed when said paper and its film are properly wrapped or located in a compact manner upon the spool as clearly shown in Fig. 3 of the drawings.

The wooden core 1 is provided with the usual slots 7 formed in its end for receiving the ordinary key carried by the camera for turning the spool and the parts to be carried thereby and for wrapping and unwrapping the heavy springy paper together with the film after the spool has been properly located in the camera.

In Fig. 4, I have shown a modification of my invention which consists of a flat disk 5 which is so constructed as to perform a similar function to the heavy paper and film to be wrapped upon the spool as that previously described in which the inner rounded contacting surfaces 6 are formed by stamping or shearing the metal from the peripheral edge of the disk to a suitable distance toward its center providing two oppositely located slots 8 thus forming a yielding contacting tongue 9, the inner contacting surfaces of said tongue being adapted to cooperate with the film paper in a similar manner to that previously described.

I do not limit myself in the construction of the disks forming the ends of the spool to the precise arrangement as hereinafter shown and described as the same may be modified or changed in many respects with-



out departing from the nature of my invention, the principal object being to provide suitable spools and abutting surfaces projecting from the inner flat surfaces of the disks and properly spaced or arranged about the same adjacent to the outer edges of the disks and adapted to cooperate with the heavy springy paper and film located between the convolutions formed whereby the latter is held by frictional contact in its proper relation in respect to the spool or core portion thereof for the purposes previously described.

My invention also prevents the film from being injured by friction marks or other abrasions in winding and unwinding the said film from the spool and further by the use of my invention the slipping and sliding of the film upon itself on the spool is prevented, all of which will appear from the foregoing description.

Having thus fully described my invention, what is claimed, is:—

1. A film spool comprising a suitable core and disks forming the outer ends of the same, at least one of said disks having at least one inwardly projecting rounded retaining lug located at a suitable distance outward of said core and adapted to engage the edge of the loose end of a paper strip or similar ribbon, and hold the same from accidental unwinding, substantially as described.

2. A film spool comprising a suitable core and disks formed in the outer ends of the same, the said disks having inwardly projecting opposing rounded retaining lugs circumferentially spaced in respect to each other and located at a suitable distance outward from said core and adapted to engage the edges of the loose end of a paper strip or ribbon and to hold the same against accidental unwinding, substantially as described.

3. A film spool comprising a suitable core and disks formed in the outer ends of the same, the said disks having inwardly projecting opposing rounded retaining lugs circumferentially spaced in respect to each other and located at a suitable distance outward from said core and adapted to engage the edges of the loose end of a paper strip or ribbon and to hold the same against accidental unwinding, the said retaining lugs being formed by pressing the said end disks inward, substantially as described.

4. A film spool comprising a suitable core, disks forming the opposite ends of the spool and tongues forming an integral part of the disks and providing suitable inner smooth and yielding contacting surfaces, the free ends of said tongues projecting outwardly and formed by suitably slotting or shearing the metal to a suitable distance toward the core of the spool, as and for the purpose described.

In testimony whereof I affix my signature in presence of two witnesses.

HOWARD L. HILL.

Witnesses:

D. N. HILL,  
J. F. SHAY.