

No. 869,871.

PATENTED NOV. 5, 1907.

J. W. BARNES.
SPOOL FOR MUSIC ROLLS.
APPLICATION FILED AUG. 7, 1907.

Fig. 1.

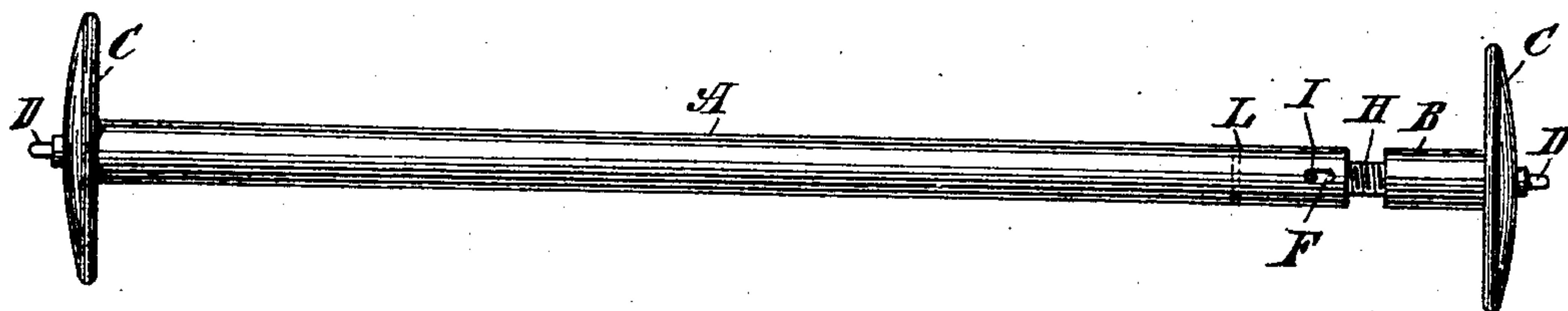


Fig. 2.

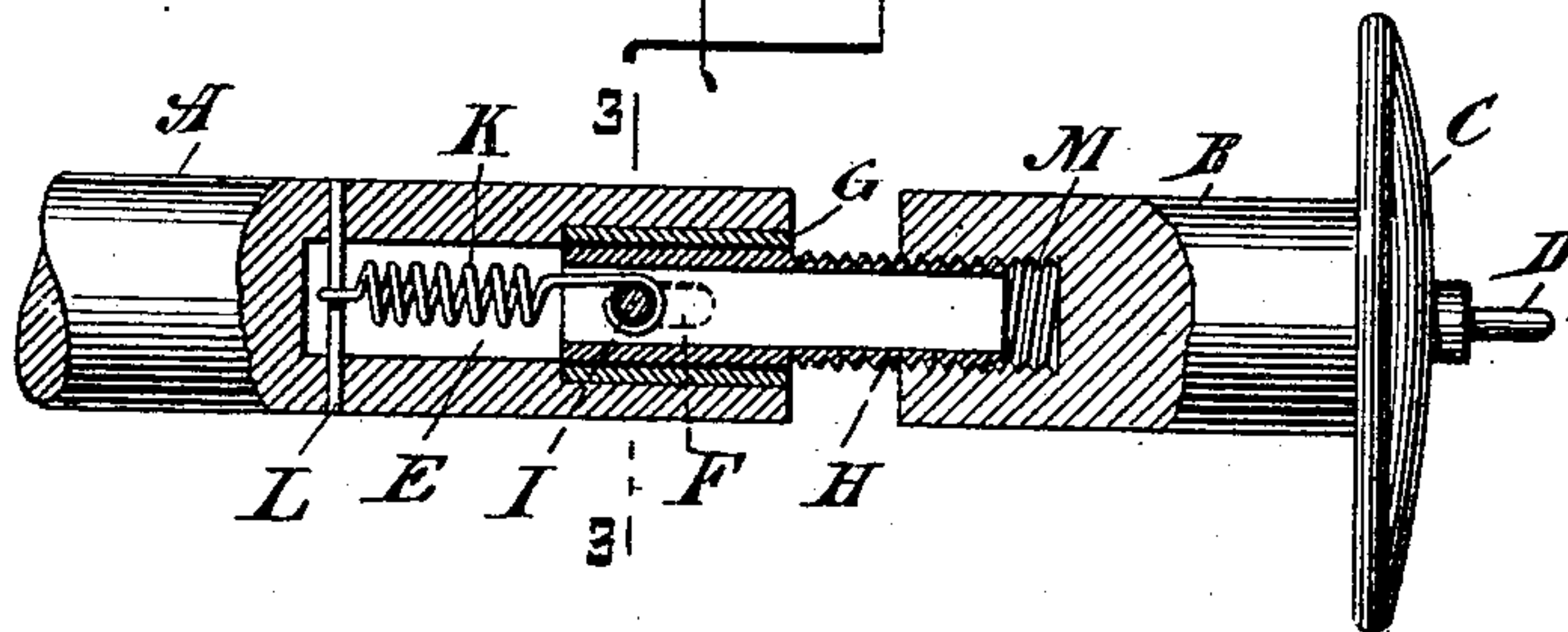
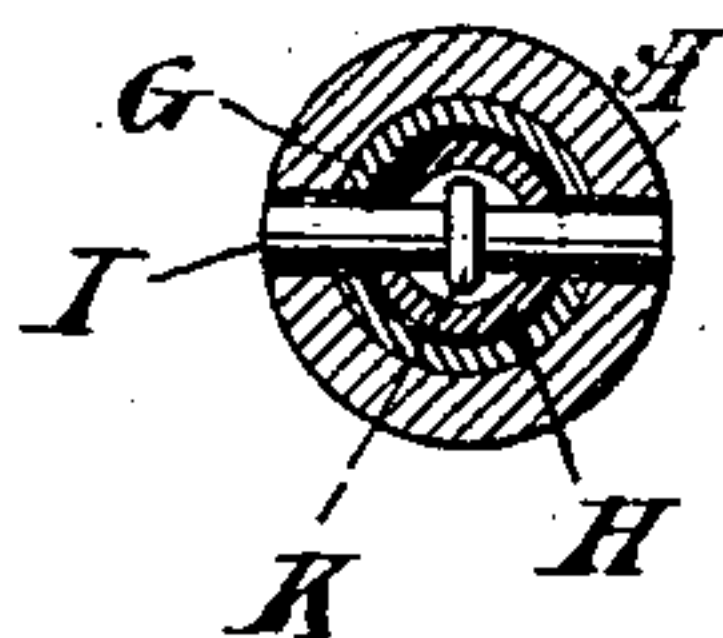


Fig. 3.



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JAMES W. BARNES, OF NEW YORK, N. Y.

SPOOL FOR MUSIC-ROLLS.

No. 869,871.

Specification of Letters Patent.

Patented Nov. 5, 1907

Application filed August 7, 1907. Serial No. 387,412.

To all whom it may concern:

Be it known that I, JAMES W. BARNES, a citizen of the United States, and a resident of New York, borough of Manhattan, in the county of New York and State of New York, have made and invented certain new and useful Improvements in Spools for Music-Rolls, of which the following is a specification.

My invention relates to an improvement in music spools of the type which is used in automatic or self-playing pianos and organs to support the music roll or sheet, and has for its object to overcome certain faults or defects which exist in the spools ordinarily used, in which the heads or flanges are at a fixed distance from one another. As the heads or flanges act as guides to the sheet to keep it in proper alinement when it is fed to the instrument, or re-rolled upon the spool after playing, it necessarily follows that the music roll should fit with but little play, about one-thirty-second of an inch between them, for if not the sheet would be permitted to have a lateral movement, which would be fatal to the accuracy of the operation of the instrument.

It is a well known fact that the paper of which the music roll is made is affected by the weather, and that it will expand or contract depending upon whether the air is moist or dry, and, as a result of this susceptibility to the climatic conditions, the width of the roll or sheet will vary by an appreciable amount, from which it follows that if the music roll is placed upon the ordinary spool when the atmosphere is dry, it will warp when the weather becomes damp and become unfit for use and oftentimes destroyed. If on the other hand, the roll is placed upon the spool when the atmosphere is damp, it will contract or shrink when the air becomes dry, and will not fit properly between the heads or flanges at the ends of the spool, which act as guides, and consequently the feeding and re-rolling operations will not be properly carried out.

My invention has for its object to overcome these faults or defects by so constructing a spool that the distance between the heads or flanges will be automatically increased or decreased as the roll expands or contracts, whereby it will always properly fit between the flanges and at the same time, all danger of the warping of the sheet will be avoided.

Another object of my invention is to construct a spool of this character, the length of which may be varied in order that it may be adapted for use with music rolls of various widths.

With these and other ends in view, my invention consists in certain novel features of construction and combinations of parts, as will be hereinafter fully described and pointed out in the claims.

In the accompanying drawings Figure 1 is a view in side elevation of my improved spool. Fig. 2 is an enlarged view of one end thereof, parts being shown in

section. Fig. 3 is a sectional view on the line 3—3 of Fig. 2.

Referring to the drawings, the spool which may be constructed of wood or any other suitable material, is made in two sections, A and B, one of which, as A, is preferably longer than the other, although it will be understood that I may make them of equal length, and each section has a head or flange C secured to its outer end in any suitable manner, and also a pin or pivot D, said pivots serving to support the spool in the instrument in the usual manner.

The inner end of section A, is provided with a recess E, which is preferably circular and which communicates with elongated slots or openings F, F, formed at diametrically opposite points on the spool, and I prefer to construct the outer portion of said recess of slightly greater diameter than the inner portion in order that I may insert therein a metallic ring or bushing G. Slidably but snugly mounted within the recess E is a hollow tubular member H, which is exteriorly threaded for a portion of its length, as clearly shown in Fig. 2, and to the inner end of which a pin I is secured, the ends of which extend into the elongated slots or openings F, F, as shown in Figs. 1 and 3, thereby permitting a limited movement of the member H. One end of a tension spring K is attached to the pin I, as shown in Figs. 2 and 3, and the other end is attached to a pin L which is secured in said spool at the inner end of the recess E, and the tension or strength of the spring is such that it tends to keep the member H in its innermost position, that is, with the ends of the pin I engaging the inner ends of the slots F, F. The inner end of section B is provided with a threaded recess M, which is adapted to receive the threaded portion of the tubular member H, as clearly shown in Fig. 2.

In mounting the paper upon my improved spool, it is glued, pasted or attached thereto in the ordinary way, the spool being first adjusted in length so that the distance between the flanges shall be about one-thirty-second of an inch greater than the width of the paper. The paper is then wound upon the spool and the completed roll placed in the box for transportation. If by reason of the dampness contained in the atmosphere the paper should swell while the roll is contained within the box, the yielding connection between the two sections of the spindle will automatically allow the flanges to so separate as to prevent the warping of the paper. In other words, the spring K will automatically allow the spool to increase in length, in accordance with the expansion of the paper. Upon removing the expanded or swelled roll from the box, the section B may be given a slight turn, in order to separate the flanges and allow the free unwinding of the paper from the spool, the adjustment being such that the spring will draw the two sections of the spindle

together, so that the pin I will rest against the inner ends of the slots F. If subsequently, by reason of the dryness of the atmosphere, the paper should contract, the section B may be given a turn in the opposite direction, and so adjusted as to allow the proper distance between the edge of the paper and the flanges, as before described.

It will be understood from the foregoing that I have constructed a spool which will automatically increase in length to provide for the expansion of the paper, and which may also be adjusted should the paper shrink or contract, thereby fulfilling all the conditions which may be imposed upon a music spool of this character.

It will be further noticed that the invention is exceedingly simple in construction, that it consists of but few parts easily and readily assembled, and inexpensive to manufacture.

Having fully described my invention, what I claim as new and desire to secure by Letters Patent, is:—

1. A music spool comprising a sectional spindle and tension means connecting said sections whereby said sections will be drawn toward one another, substantially as described.
2. A music spool comprising a sectional spindle, a member secured to one of said sections and having sliding engagement with the other of said sections, and resilient means connecting said member to said other section, substantially as described.
3. A music spool comprising a sectional spindle, a member having sliding engagement with one of said sections and resiliently connected thereto, said member being provided with means whereby the other section of the spindle is adjustably secured thereto, substantially as described.
4. A spool for carrying perforated sheet music, comprising a spindle having disks or flanges secured to the

outer ends thereof, said spindle being divided transversely into two sections, the abutting ends of said sections being provided with openings therein, a tube threaded for a portion of its length into an opening in one of said sections, the plain portion of said tube extending into the opening formed in the other section, a spring, one end of which is secured in the opening of one of said sections and the opposite end to a pin secured in said tube, substantially as described.

5. A spool for carrying perforated sheet music, comprising a spindle provided with flanges or disks on the outer ends thereof, said spindle being divided transversely into two sections, A, B, the adjacent ends of said sections being provided with circular openings, a tube threaded for a portion of its length into the opening in section B, the opposite end of the tube being plain and sliding in the opening in the section A, a spring, one end of which is secured in the opening in section A, the opposite end of said spring being secured to a pin fixed in said tube, the ends of said pin fitting in elongated openings formed in the section A, substantially as described.

6. A spool for carrying perforated sheet music, comprising a spindle provided with flanges or disks on the outer ends thereof, said spindle being divided transversely into two sections, A, B, a tube threaded at one end in an opening in section B, the opposite end of said tube being plain, a bushing fitted in an opening in said section A and in which slides the plain end of said tube, a spring contained within said section A and having one end secured in said section, the opposite end of the spring being secured to a pin fixed in said tube, the ends of said pin extending into elongated openings formed in said section A, substantially as described.

Signed at New York borough of Manhattan in the county of New York and State of New York this 31st day of July A. D. 1907.

JAMES W. BARNES.

Witnesses:

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JOHN B. WHITE.