H. G. MILLER.

AUTOMATICALLY ADJUSTABLE SPOOL FOR PERFORATED MUSIC SHEET ROLLS FOR MECHANICAL PIANO PLAYERS.

APPLICATION FILED AUG. 8, 1910.

977,030. Patented Nov. 29, 1910.

Fig. 1

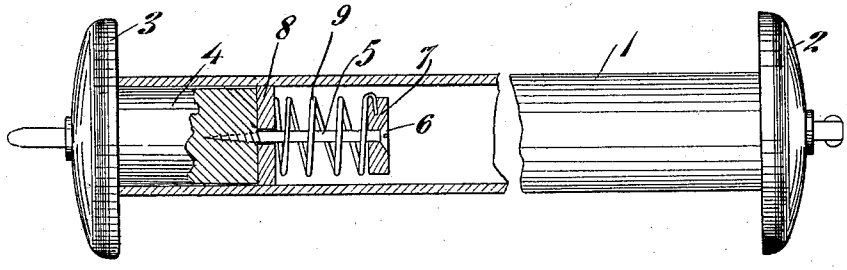


Fig. 2

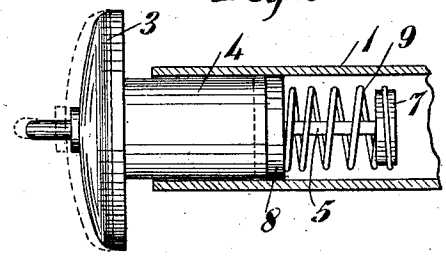
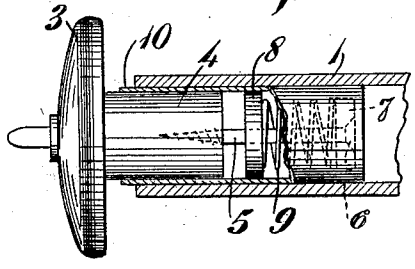


Fig. 3



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UNITED STATES PATENT OFFICE.

HARRY G. MILLER, OF CINCINNATI, OHIO, ASSIGNOR TO THE VOCALSTYLE MUSIC COMPANY, OF CINCINNATI, OHIO, A CORPORATION OF OHIO.

AUTOMATICALLY-ADJUSTABLE SPOOL FOR PERFORATED MUSIC-SHEET ROLLS FOR MECHANICAL PIANO-PLAYERS.

977,030. Specification of Letters Patent. Patented Nov. 29, 1910.

Application filed August 8, 1910. Serial No. 576,059.

To all whom it may concern:

Be it known that I, HARRY G. MILLER, a citizen of the United States, residing at Cincinnati, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Automatically-Adjustable Spools for Perforated Music-Sheet Rolls for Mechanical Piano-Players, of which the following is a specification.

My invention relates to means for adjusting the length of the spool and to means for automatically adjusting the flange of the spool with relation to the edge of the music sheet to accommodate variations or inequalities in the width of the sheet as produced, or on account of contraction and expansion of the sheet due to atmospheric or other conditions.

The object of my invention is to provide a simple, economical and efficient spool for these purposes and to prevent the sheet from binding during the operation of winding or unwinding.

My invention consists in a tube, a stem adapted to fit loosely within the end of said tube, a flange on the outer end of said stem adapted to abut the end of said tube, a pin projecting from the inner end of said stem, a bearing member loosely mounted on said pin and adapted to engage said tube, a disk on said pin and a spring interposed between said disk and said bearing member whereby said stem and flange are adapted to yield lengthwise a limited distance to provide for variations in the width of the music sheet.

My invention also consists in certain novel details of construction and in the combination of parts herein set forth and claimed.

In the drawings which serve to illustrate the construction of my invention: Figure 1 is a view of a roll spool partly in side elevation and partly in section showing one end of the spool equipped with my invention. Fig. 2 is a fragmentary view of a roll spool showing the flange in adjusted position. Fig. 3 is an end view of a roll spool illustrating a slight modification of my invention.

In the embodiment of my invention as illustrated I provide a tube 1 upon which the music sheet is wound into a roll. A stationary flange 2 is provided upon one end of the tube and at its other end I provide an adjustable flange 3 mounted upon a stem 4 which loosely enters and fits within the tube 1 and is adapted to slide to and fro therein. Fastened securely to the end of said stem is a pin or screw 5 having a head 6 adapted to hold a washer 7 thereon. A friction disk 8 is placed on said pin adjacent said stem and a spring 9 is interposed between said friction disk and washer. The friction disk 8 is adapted to fit tightly inside of the tube 1 and the friction between said disk 8 and the inside surface of said tube is great enough to overcome the ordinary pressure of the spring 9.

The friction disk 8 is held stationary while the flange 3 is allowed to yield to and fro under the pressure of the spring 9 to accommodate itself to the variations in the width of paper and avoid any danger of binding. When, however, it is desired to materially lengthen the spool to accommodate it to a roll of greater width, the flange 3 may be pulled out with sufficient force to also move the friction disk 8, thereby shortening the distance between the friction disk 8 and the end of the tube 1 and increasing the distance between the flanges 2 and 3, as best shown in Fig. 2. The dotted line in Fig. 2 shows the adjustment of the flange 3 against the pressure of the spring 7.

When the music sheet is wound upon the tube 1 of the spool, the flange 3 is pulled sufficiently to allow the music sheet plenty of play and upon completing the winding of the music sheet upon the tube, the flange 3 is forced inwardly against the music sheet roll, thereby truing up the music sheet and putting it in condition for immediate use.

I preferably construct the tube 1 of the spool slightly shorter than the normal width of the music sheet, thus insuring that the flange 3 will always bear against the paper and not against the tube 1 of the spool. It is readily seen that the flange 3 bearing against the music sheet by means of the pressure of the spring 9, the music sheet will always roll up perfectly and that it will never bind when different atmospheric conditions cause its width to vary.

If desired, my device may be constructed as shown in Fig. 3 with a sleeve 10 fitting snugly in the inside of the tube 1 of the spool. The stem 4 of the flange 3 then fits loosely inside of the sleeve 10 having the pin or screw 5 fastened thereto and the washer 7

fastened at the other end thereof, the spring 9 being connected to the washer 6 in the same manner as shown in Figs. 1 and 2 and bearing against a friction disk 8 inside the sleeve 10. In this manner I am enabled to adjust the length of the tube 1 of the roll spool by means of pulling the sleeve 10 outwardly, as shown in Fig. 3, in which case I obtain the automatic adjustment beyond the end of the sleeve 10.

It is apparent from the foregoing description that I not only obtain an automatic adjustment but also an adjustment which will bear a greater amount of resistance.

Modifications of my invention may be made without departing from its spirit and scope, and I do not wish to be confined to the exact details shown.

What I claim as new and desire to secure by Letters Patent is:

A spool for music rolls comprising a tube, flanges at the ends thereof, one flange being adjustable and having a stem thereon adapted to fit loosely in said tube of the spool, a pin projecting from the inner end of said stem, a washer mounted and held on said pin, a friction disk loosely mounted on said pin and adapted to engage said tube, and a spring interposed between said washer and said friction disk, substantially as set forth and for the purposes specified.

HARRY G. MILLER.

Witnesses:
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