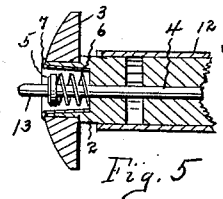
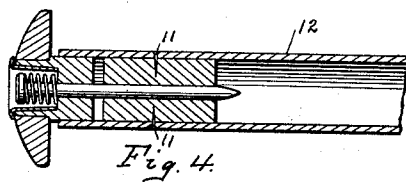
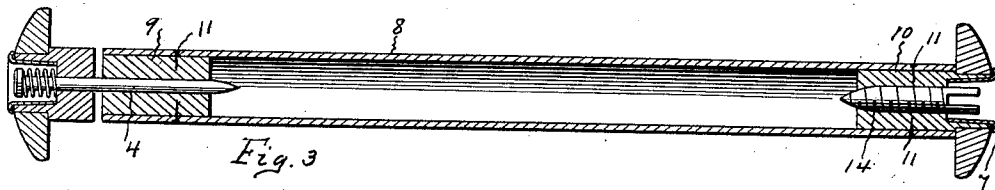
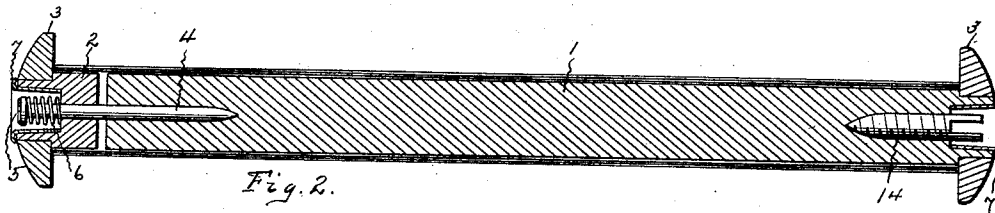
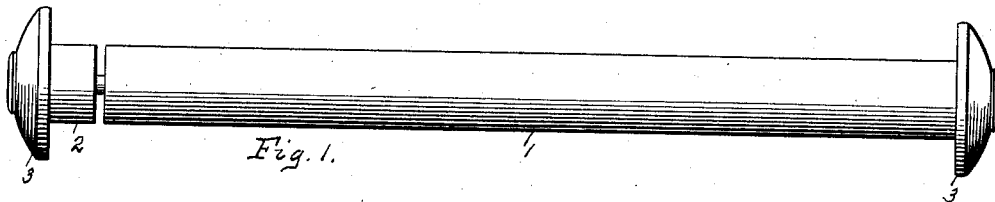


G. H. DAVIS.
ADJUSTABLE MUSIC ROLL SPOOL.
APPLICATION FILED FEB. 24, 1911.

1,059,042.

Patented Apr. 15, 1913.



WITNESSES

Estella Smalley
Myron L. Sanders

George Howlett Davis INVENTOR

Louis M. Sanders BY
ATTORNEY

UNITED STATES PATENT OFFICE.

GEORGE HOWLETT DAVIS, OF WEST ORANGE, NEW JERSEY.

ADJUSTABLE MUSIC-ROLL SPOOL.

1,059,042.

Specification of Letters Patent.

Patented Apr. 15, 1913.

Application filed February 24, 1911. Serial No. 610,605.

To all whom it may concern:

Be it known that I, GEORGE HOWLETT DAVIS, a citizen of the United States, residing in the town of West Orange, county of Essex, and State of New Jersey have invented certain new and useful Improvements in Adjustable Music-Roll Spools, of which the following is a full, clear, and exact description, such as will enable others skilled in the art to which it pertains to make, construct, and use the same.

In the construction and use of spools for perforated music rolls it is necessary to provide for endwise adjustment of the spool in order that the perforations in the music sheet or roll itself shall properly register with the pneumatic ducts of the tracker-board over which such roll is designed to travel. It is also necessary to provide the spool with some means of adjustment in itself so that as the paper, of which the sheet itself is made, expands or contracts under the different atmospheric conditions, the spool itself may lengthen and shorten automatically in accordance with the expansion and contraction of the paper, so that the sheet may be evenly wound upon the spool and accurately confined between the spool flanges so as to track properly over the trackerboard ducts. Numerous schemes have been proposed to accomplish this result but thus far all have some more or less important objection either on the ground of unnecessary complication or increased expense.

The object of my invention, therefore, is to overcome the difficulties inherent in prior constructions and to provide a music roll spool which shall be automatic in its take-up features, simple and cheap in its construction, and not liable, in ordinary or even rough usage, to get out of order.

In carrying out my invention I make use of the structures illustrated in the accompanying drawings, wherein,

Figure 1, is a general view of the completed spool designed for 88-note music. Fig. 2, is a longitudinal section of the same. Fig. 3, is a longitudinal section of a slight modification wherein a paper tube is substituted for the ordinary wooden spool body. Fig. 4, is a slight modification of the structure illustrated in Fig. 3. Fig. 5, is a longitudinal section of a spool designed for 65-note music, showing the slight changes necessary over that used for 88-note music.

Similar letters of reference refer to like parts throughout the specification and drawings.

The spool made in accordance with my improvements is comprised of two sections, the main section 1 and the adjusting section 2. Each of these sections is provided with a flange 3 secured in the usual or desired manner, as for example, being glued to the slightly reduced ends of the sections 1 and 2. Extending axially into the left-hand end of the section 1 is the headed pin 4, said pin being rigidly secured in position in the section 1. Mounted upon this pin for easy longitudinal adjustment is the above mentioned section 2. From an inspection of sectional views of the drawings it will be seen that the head 5, of the pin 4, is located in a circular cavity in the section 2 and between the head 5 and the bottom of the cavity is located a small spiral spring 6, the tendency of which is to force the section 2 into contact with the section 1. As an armor for the cavity at the end of the section 2, I provide a flanged thimble 7 as a metal bearing for the conical trunnions upon which the spool is mounted in the player instrument when in use. The flange of this thimble projects laterally over the annular end of the section 2, so as to inclose beneath it a small annular portion of the spool flanges 3, thus forming an additional safeguard over the ordinary method of securing such flanges to prevent them from becoming unglued and detached from the spool sections.

As illustrated in Fig. 3, I have substituted for the ordinary wooden body 1 of the spool, a tubular body 8, made of pasteboard, into the ends of which are inserted the plugs 9 and 10, said plugs being firmly secured in position either by glue or by pins 11. The plug 9 serves as a means for securing the headed pin 4 for the adjusting end of the spool, as clearly illustrated in Fig. 3.

In the modification illustrated in Fig. 3, I have shown the outside diameter of the spool section 2, to be the same as the outside diameter of the tubular section 8. However, in the modification illustrated in Fig. 4, I may use a longer section of paper tube as 12, locating the headed pin 4 in the plug section while the adjusting section of the spool body is made of a diameter slightly smaller than the inner portion of the tube into which the smaller section extends.

Otherwise the construction is substantially the same as that illustrated in Fig. 2.

For use with 65-note music sheets I may provide the headed pin 4 with a pivot end 5 13 whereby the spool is supported in the spool bearings, usually found on 65-note musical instruments, as clearly illustrated in Fig. 5. The right-hand end of the spools illustrated in Figs. 1, 2, 3, and 4, is substantially the same as the flange construction of the other end, with the exception that the driving screw pin 14 is driven axially into the end of the spool section 1 or the plug 10 as the case may be, the flange 3 15 being mounted upon the reduced end of the section 1 and held in position both by glue and by the flange thimble 7. This latter construction permits the slotted screw pin 14 to be adjusted in the direction of the length 20 of the spool body so that the perforations in the music roll mounted upon the spool body may "track" properly upon the trackerboard of the instrument, it being understood that the driving mechanism for re- 25 winding the spool and for supporting the spool while the music is being played is mounted in substantially stationary bearings, so as to have no lateral play.

In all of the structures above described it 30 is to be understood that the music roll is to be wound upon the spool and that such roll is to be held against the right-hand spool flange for the purpose of accurately guiding same over the trackerboard. Atmospheric 35 changes, however, will expand and contract this paper roll and it requires either frequent hand adjustment or constant automatic adjustment so as to crowd the wound up roll over against the right hand flange. 40 It will be readily seen that the above structures all provide for the automatic crowding of the paper roll against the right hand flange of the spool and this is done by the resilient pressure of the left-hand spool

flange against the left-hand end or edge of 45 the paper roll. This pressure is applied at all times during the use of the roll in practice and requires only a slight pressure such as would be afforded by the spring 6 or the spring 19.

Slight modifications in the above structures will readily suggest themselves to persons skilled in the art of music roll manufacture. I therefore do not wish to confine myself strictly to the various modifications 55 above described and illustrated in the drawings.

I claim:—

1. A music roll spool comprising a main body section having a headed pin secured in 60 one end thereof, a supplemental body section loosely mounted upon said pin in axial alinement with said main body section, a compression spring mounted upon said pin and bearing upon its head and upon the 65 adjacent end of said supplemental section to press said sections together, a spool flange mounted upon each non-adjacent end of said sections and a thimble bearing secured in a circular cavity in each of said flanges. 70

2. In a music roll spool the combination of a main body section, a headed pin secured in one end of said section, an apertured supplemental body section slidably mounted upon said pin, in axial alinement 75 with said main body section, a compression spring upon said pin bearing upon said supplemental section and said head to draw said sections together a flange upon each non-adjacent end of said sections and a 80 thimble bearing secured in a circular cavity in each of said flanges.

In witness whereof I have hereunto set my hand this 6th day of February, 1911.

GEORGE HOWLETT DAVIS.

Witnesses:

B. A. MASTERS,
L. M. SANDERS.