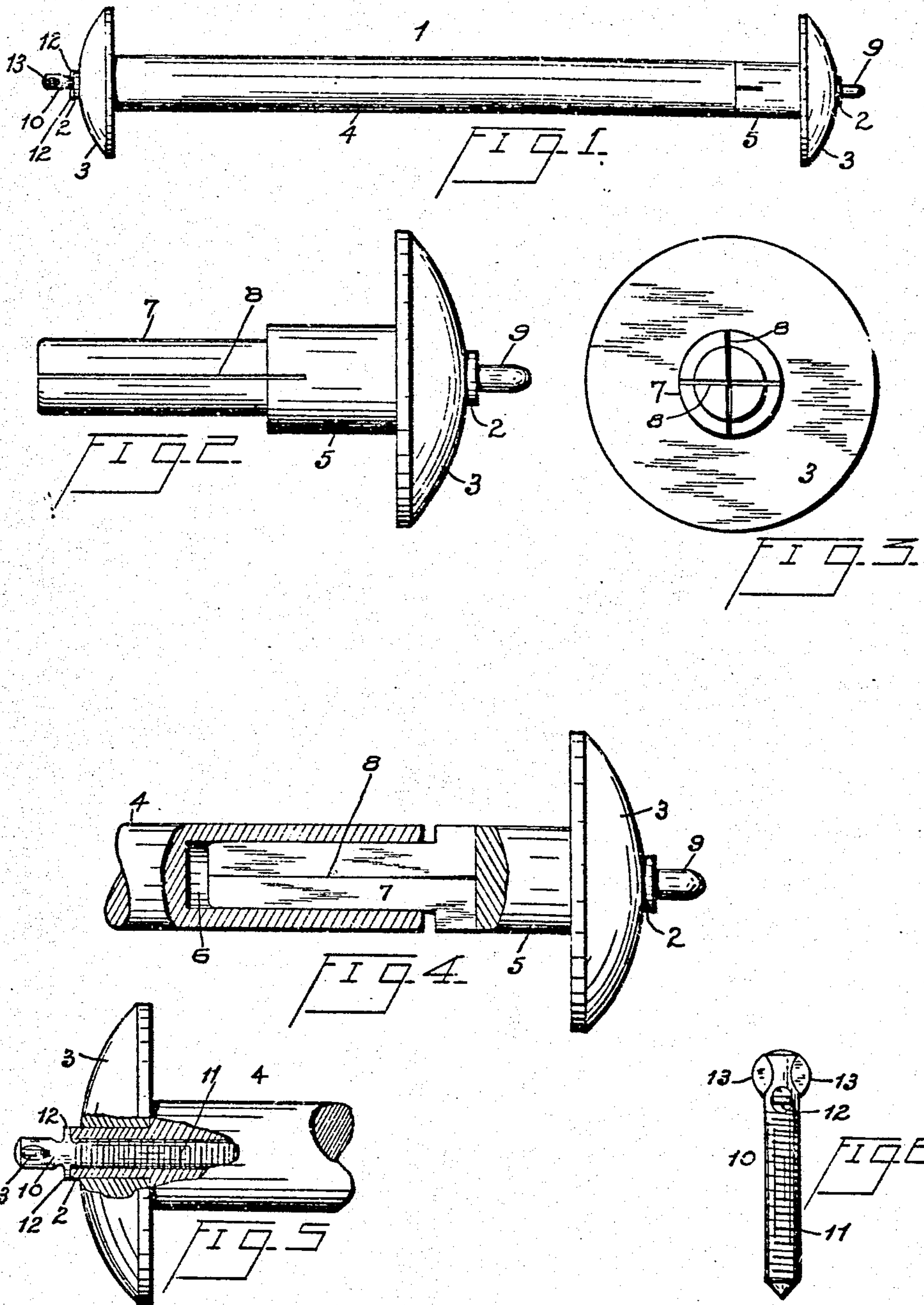


W. S. DENTON.
SPOOL FOR MUSIC ROLLS.
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914,811.

Patented Mar. 9, 1909



WITNESSES

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SPOOL FOR MUSIC-ROLLS.

No. 914,811.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, WILLIAM S. DENTON, a citizen of the United States, residing in New York city, in the State of New York, have invented certain new and useful Improvements in Spools for Music-Rolls, of which the following is a specification.

This invention relates to spools for music sheets or rolls such as are employed in self-playing musical instruments, and the objects of the invention are to provide an improved construction of spool which is adjustable longitudinally; to enable such adjustment to be effected between the end flanges of the spool or outside of the same, or both; to thus enable the spindle of the spool to be lengthened or shortened to compensate for variations in the width of the music sheets due to atmospheric or other conditions, and also to enable the end bearings of the spool to be moved toward or away from each other independently of said spindle adjustment; to thus secure great exactness and uniformity in the operation of the spool and a consequent perfect action of the music sheet; to provide a simple, inexpensive and durable construction, and to obtain other advantages and results as may be brought out in the following description.

Referring to the accompanying drawings, in which like numerals of reference indicate the same parts in the several figures, Figure 1 is a side view of a spool embodying my invention; Fig. 2 is a side view of an adjustable end section, and Fig. 3 is a view of the same from its inner end; Fig. 4 is a side view of a portion of the spool, partly in central longitudinal section to illustrate the connection of its adjustable sections; Fig. 5 is a side view of an end portion of the spool, partly in central longitudinal section and illustrating the end-bearing or pin, and Fig. 6 is a side view of said end-bearing or pin, looking at it in a direction at right angles to that of Fig. 5.

In said drawings, 1 indicates a spindle having shouldered and reduced ends 2, 2 on which are mounted the usual disks or flanges 3, 3, to form a spool for a perforated music sheet. These flanges may be loose on the ends 2 but are generally set tight thereon, and in either case the shoulders will prevent their moving inward so as to interfere with the action of the music sheet. Said spindle is made up of two sections 4 and 5 adjustable

with respect to each other longitudinally of the spool in order to provide lateral adjustment to take up the expansion, contraction, or other variations in the width of music sheets: It is to the means for connecting and adjusting these sections of the spindle to which my invention relates in part, and these means will be next described. The inner end of the long section 4 is bored out or socketed, as at 6, and the adjacent or inner end of the other or short section 5 has a shoulder and an extension 7 reduced to a diameter which is normally slightly larger than the bore of the said socket 6 in section 4. Said reduced end 7 is provided with longitudinal saw kerfs or slits 8, preferably two at right angles to each other in end view, as shown in Fig. 3. These slits are of such width as to allow the fingers formed by the slitted extension 7 to be compressed so as to enter the socket 6 and fit nicely therein or with considerable friction. Furthermore, the slits 8 preferably extend beyond the shoulder at the end extension 7 a short distance into the spindle section 5, as shown in the drawings. This gives greater resiliency to the longitudinal fingers into which the slits divide the end extension 7, particularly near their bases, and permits them to be compressed or approximated throughout their entire length, and insures that said fingers will hold firmly in the socket in any position. I consider four fingers (or even three) preferable to two, as the latter will allow deflection of the members in a plane through the slit between the fingers, whereas a greater number than two will not. In use of the spool, the fingers of the section 5 are pushed into the socket 6 any desired distance to accommodate the width of a perforated sheet wound on the spool; if by reason of dampness or heat the paper should expand or contract, the section 5 may be readjusted, and held firmly at any point by its own friction with the other section.

Heretofore it has been common to support the spool in its bearings, (not shown), by means of pins or studs driven into the extremities of the reduced ends 2, 2, which project outside the flanges 3, 3, but this has not spaced the end supports or pins very accurately, on account of variations which occur in manufacture of the wooden portion of the spool, and has not at all afforded any

opportunity to adjust the bearings in compensation of longitudinal shifting of the sections of the spindle.

A second feature of my improved spool, 5 and which feature will now be described, is to enable adjustment of the end bearings and independently of the spindle. One end of the spool is provided with a fixed pin or stud 9, but the opposite, and preferably the 10 driving, end of the spool has a pin or stud 10 which is threaded as at 11 to screw into the end of the spindle and can thus be moved out or in as is desired. Adjacent to said threaded portion 11, the pin or stud 10 15 has at opposite sides of itself transverse wings 12 pinched or raised up out of the body of the pin, and which wings serve as a fixed stop to engage the bearings (not shown), instead of the end 2, of the spindle. 20 Still further out than the wings 12, are the usual longitudinally disposed fins 13 for engagement with the driving means.

The music sheet, it will be understood, is attached to the long section 4 of the spindle, 25 leaving the short section 5 free for adjustment as described to vary the length of the spindle or distance between the flanges 3, 3. If adjustment of the spool to its bearings is needed, the pin or stud 10 is screwed in or 30 out to the proper point. In some cases both adjustments may be employed to advantage.

My improved spool is thus capable of all possible adjustments which can be desired, and each adjustment can be made independently: 35

Having thus described the invention, what I claim as new is:

1. In a spool for music rolls, a spindle comprising two sections of substantially the same diameter, one having a socket bored in 40 its end and the other having a reduced extension of larger diameter than said socket, said extension having a plurality of diametric slits extending longitudinally of itself and into the body of the section having 45 said extension, whereby the extension may be compressed as slid longitudinally into the socket in frictional holding engagement therewith.

2. In a spool for music rolls, the combination 50 with two sections having flanges near their outer ends, and means for telescopically adjusting the sections on each other between their flanges; of a pin or stud at each of said section ends, means for adjusting one 55 of said pins or studs longitudinally of its section, and a bearing portion on the projecting part of each pin.

WILLIAM S. DENTON.

In the presence of—

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