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PATENTED JULY 19, 1904.

W. S. PAIN.

MEANS FOR SECURING END FLANGES TO MUSIC ROLL SPOOLS.

APPLICATION FILED APR. 30, 1904.

NO MODEL.

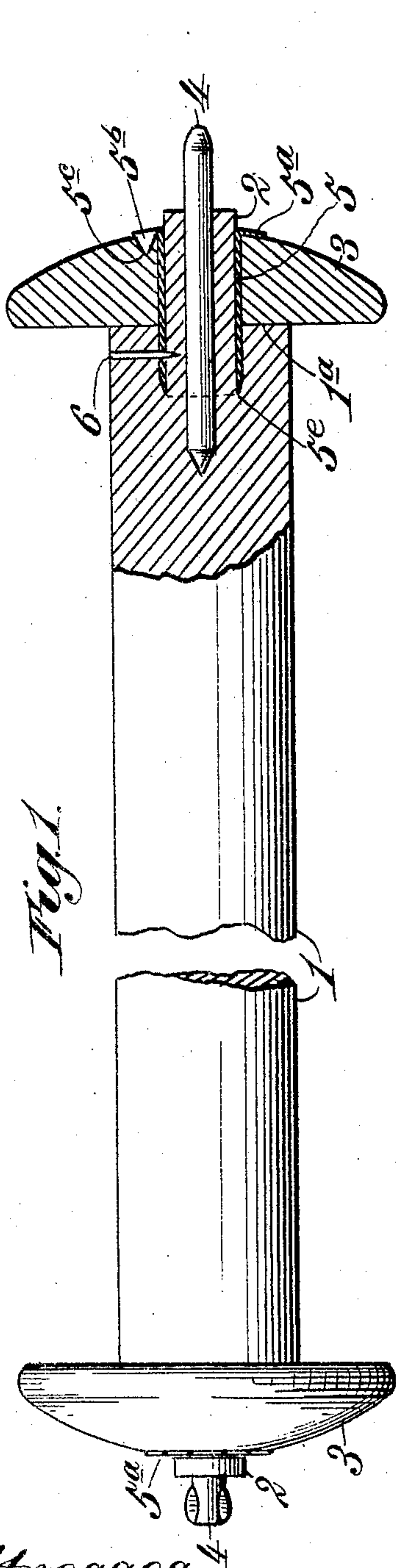


Fig. 1.

Fig. 3.

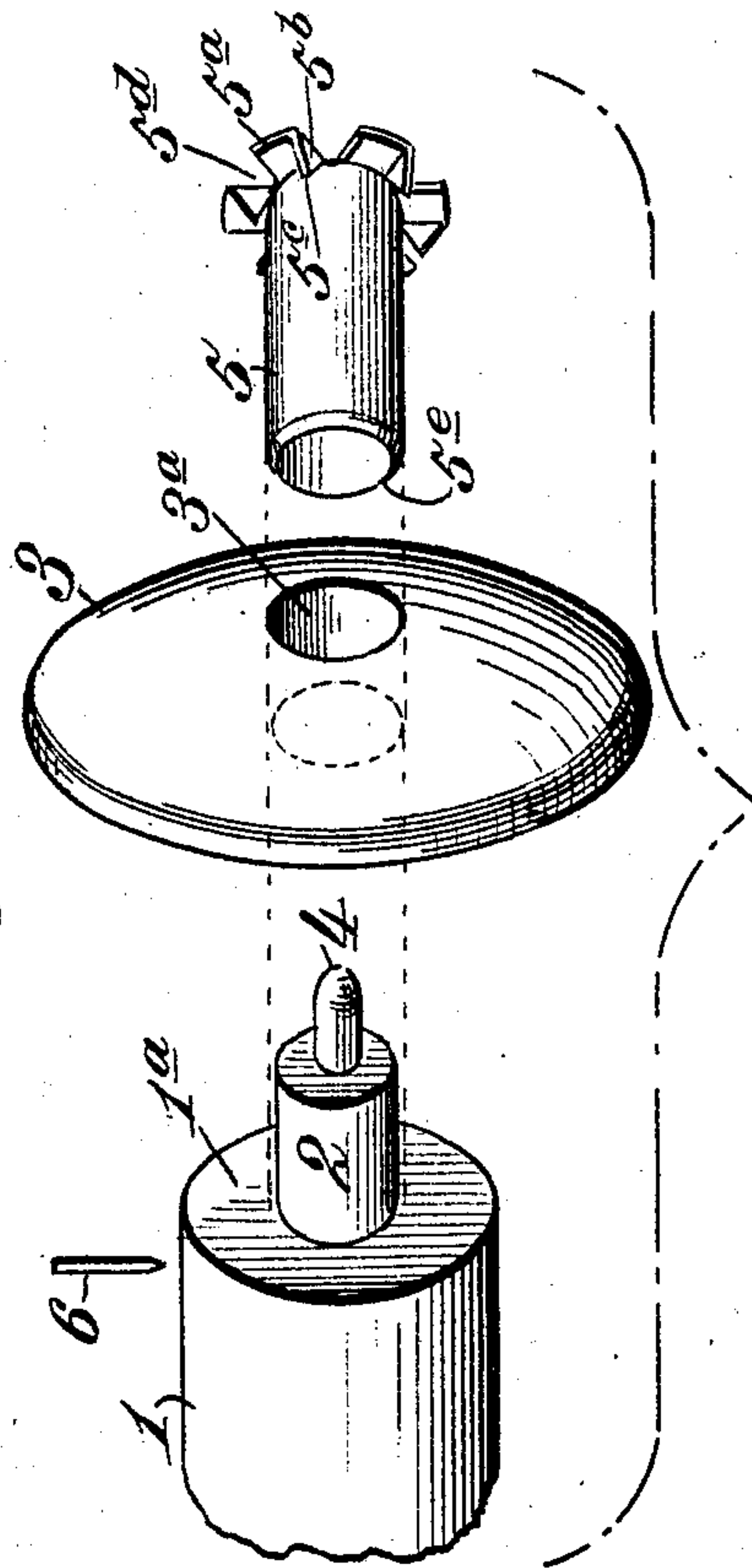
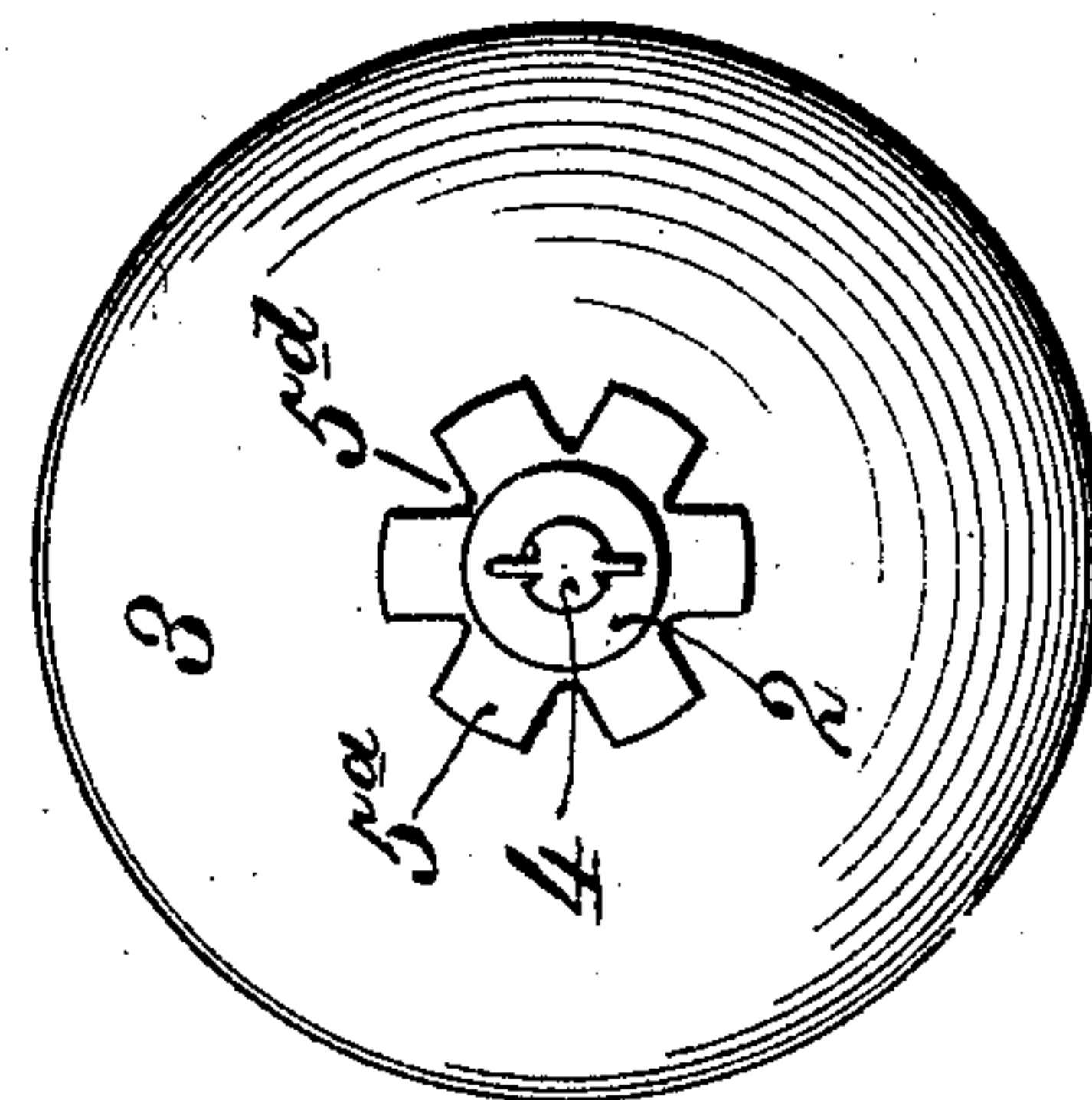


Fig. 2.



Witnesses.
Robert Emmett.
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Inventor:
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Att'y.

UNITED STATES PATENT OFFICE.

WILLARD S. PAIN, OF MERIDEN, CONNECTICUT, ASSIGNOR TO THE
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CONNECTICUT.

MEANS FOR SECURING END FLANGES TO MUSIC-ROLL SPOOLS.

SPECIFICATION forming part of Letters Patent No. 765,591, dated July 19, 1904.

Application filed April 30, 1904. Serial No. 205,771. (No model.)

To all whom it may concern:

Be it known that I, WILLARD S. PAIN, a citizen of the United States, residing at Meriden, in the county of New Haven and State of Connecticut, have invented new and useful Improvements in Means for Securing End Flanges to Music-Roll Spools, of which the following is a specification.

This invention relates to an improved music-roll spool adapted to have wound upon it a sheet of perforated music; and the invention has for its object to provide novel, simple, and efficient means for securing the end flanges thereof.

To the end stated the invention consists in the novel elements and their arrangement, as hereinafter described and claimed, reference being made to the accompanying drawings, illustrating the preferred embodiment of the invention.

In said drawings, Figure 1 is a sectional side elevation. Fig. 2 is an end view. Fig. 3 is a view of one of the ends of the spool with an end flange and the securing means shown separated.

In the said drawings the reference-numeral 1 designates the body or mandrel of the spool, upon which the perforated music-sheet is to be wound in any of the known suitable manners. The ends of this body or mandrel are provided with tenons 2, preferably formed by reducing the ends of the body portion, upon which are arranged the end flanges 3 of the spool. The spool is provided with gudgeons 4 of any suitable type applied thereto in any suitable way and adapted to rotate in suitable bearings in the instrument in which the music-roll is to be utilized.

The details of construction and arrangement of the spool as thus far described may be varied or the spool constructed in any suitable manner without departing from my invention, which does not relate to these details, but is directed to the means for securing the end flanges on the spools. The flanges are confined on said tenons and secured against rotation thereon by means of sleeves or bushings 5, which are interposed between the tenon-

openings 3^a of the flanges and the tenons 2 and fit snugly about the latter. Said sleeves are provided with means to engage the flanges to hold them on the tenons against the walls 1^a of the body or mandrel of the spool and prevent movement or displacement of said flanges in the longitudinal direction of the spool and also with means to engage said flanges and secure them from rotative movement or displacement on the tenons, whereby the flanges are maintained upon the spindles and held firmly and immovably against the abutment-walls 1^a of the spool body or mandrel.

As shown in the example of my invention illustrated in the drawings, the means for preventing longitudinal movement or displacement of the flanges consists of annular outstanding rims 5^a, provided at the outer ends of the sleeves 5, and the means for preventing rotative movement or displacement of the flanges 3 on the tenons consists of tongues 5^b, projecting inwardly from the outstanding annular rims. These tongues in the present instance are pointed, as at 5^c, to facilitate their entrance into the material of the flanges 3 and are formed by slitting the outstanding rims at suitable intervals, as shown at 5^d, and bending one corner and edge of the segments of the rims inward. The sleeves are designed to be interposed between the tenon-openings 3^a of the end flanges of the spool and the tenons and driven home, the inner circumferential edges of the sleeves constituting cutting edges 5^e, which penetrate and cut their way into the material of the body or mandrel 1 of the spool a suitable distance. The tongues 5^c penetrate and are embedded in the material of the flanges 3, and the outstanding annular rim-segments engage the outside faces of the flanges 3 around and about the tenon-openings of said flanges and may for the purpose of having these rim-segments merge into or be flush with the surface of the flanges 3 be embedded therein, as shown, and when so embedded they afford additional resistance to rotative movement or displacement of the flanges.

The frictional hold of the sleeves driven into

the material of the body or mandrel of the spool, as described, may be found sufficient to prevent movement or displacement of itself, and consequently of the flanges 3, both longitudinally of the spool and rotatively upon the tenons thereof, and thus constitute a means of securing the sleeve to the spool; but it is preferable to secure the sleeves, and through them the flanges, against possibility of such movement or displacement by pins 6, that are entered into the body of the spool and pass through the sleeves, thus securely confining them against displacement in any direction.

By my invention I provide a novel, very simple, and economical yet thoroughly efficient means of securing end flanges upon music-rolls.

Having thus described my invention, what I claim is—

1. In combination with a music-roll spool having an end flange, means for securing said flange to the spool, consisting of a sleeve provided with means engaging the flange for preventing longitudinal and rotative movement or displacement of said flange, and means for securing said sleeve to the spool.

2. In combination with the mandrel and an end flange of a music-roll spool, of means for securing said flanges to said mandrel, consisting of a sleeve having an outstanding rim and inwardly-projecting tongues, said rim engaging said flange to prevent longitudinal movement or displacement thereof and said tongues embedded in said flange to prevent rotative movement or displacement thereof, and means for securing said sleeve to said spool.

3. In combination with a music-roll mandrel and an end flange, of means for securing said flange to said mandrel, consisting of a sleeve having an inner cutting edge and provided at its outer end with an outstanding rim and inwardly-projecting tongues, said rim engaging said flange to prevent longitudinal movement or displacement thereof, and said tongues embedded in said flange to prevent rotative movement or displacement thereof, and means for securing said sleeve to said spool.

4. A device for securing end flanges to music-roll spools, consisting of a tube provided at one end with an outstanding rim and tongues angularly disposed with respect to said rim.

5. A device for securing end flanges to music-roll spools, consisting of a tube provided at one end with an outstanding rim and tongues angularly disposed with respect to said rim and having pointed extremities.

6. In combination with a music-roll spool having an end flange, of a device securing the

flange to the spool, consisting of a tube and provided at one end with an outstanding rim engaging the flange for preventing longitudinal displacement thereof and having angularly-disposed tongues embedded in said flange to prevent rotative displacement thereof.

7. A device for securing end flanges to music-roll spools, consisting of a sleeve provided at one end with an outstanding rim composed of a plurality of segments, one end of the several segments being inwardly bent to form angularly-projecting tongues.

8. A device for securing end flanges to music-roll spools, consisting of a sleeve having a cutting edge at one end and at the other end provided with an outstanding rim, and tongues disposed angularly with respect to said rim.

9. In combination with a music-roll spool having an end flange, means for securing said flange to the spool, consisting of a sleeve provided with means engaging the flange for preventing longitudinal and rotative movement or displacement of said flange, and means for securing said sleeve to the spool, consisting of a pin engaging said spool and sleeve.

10. In combination with the mandrel and an end flange of a music-roll spool, of means for securing said flanges to said mandrel, consisting of a sleeve having an outstanding rim and inwardly-projecting tongues, said rim engaging said flanges to prevent longitudinal movement or displacement thereof and said tongues embedded in said flange to prevent rotative movement or displacement thereof, and means for securing said sleeve to said spool, consisting of a pin engaging said spool and sleeve.

11. In combination with a music-roll mandrel and an end flange, of means for securing said flange to said mandrel, consisting of a sleeve having an inner cutting edge and provided at its outer end with an outstanding rim and inwardly-projecting tongues, said rim engaging said flange to prevent longitudinal movement or displacement thereof, and said tongues embedded in said flange to prevent rotative movement or displacement thereof, and means for securing said sleeve to said spool, consisting of a pin engaging said spool and sleeve.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

WILLARD S. PAIN.

Witnesses:

JAMES B. TRACY,
WM. K. BRIGHAM.