

W. C. RUNGE.
 MANDREL FOR PHONOGRAPH RECORDS.
 APPLICATION FILED APR. 21, 1909.

943,568.

Patented Dec. 14, 1909.

Fig. 1.

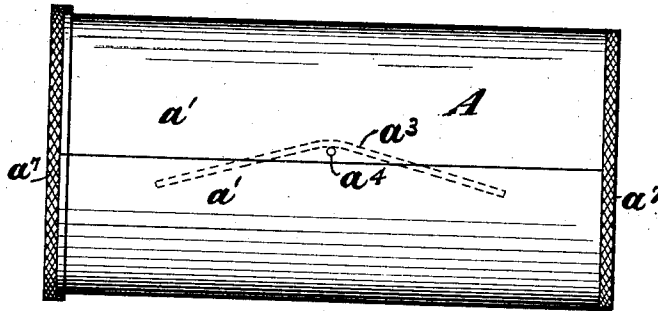


Fig. 2.

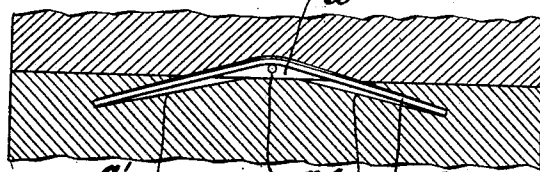


Fig. 3.



Fig. 4.

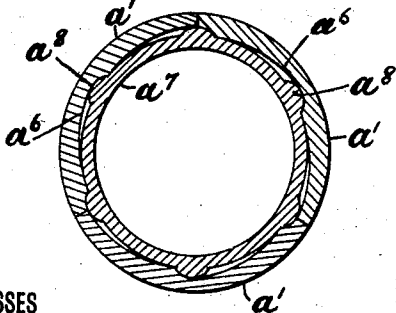
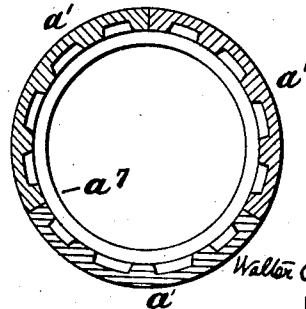


Fig. 5.



WITNESSES

May 9, 1910

Frank E. Hoffmann

Walter C. Runge
 INVENTOR

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HIS ATTORNEYS

UNITED STATES PATENT OFFICE.

WALTER C. RUNGE, OF CAMDEN, NEW JERSEY, ASSIGNOR TO ROYAL PHONE AND PHONOGRAM COMPANY, OF BOSTON, MASSACHUSETTS, A CORPORATION OF MAINE.

MANDREL FOR PHONOGRAPH-RECORDS.

943,568.

Specification of Letters Patent. Patented Dec. 14, 1909.

Application filed April 21, 1909. Serial No. 491,224.

To all whom it may concern:

Be it known that I, WALTER C. RUNGE, a citizen of the United States, and a resident of Camden, county of Camden, and State of New Jersey, have invented certain new and useful Improvements in Mandrels for Phonograph-Records, of which the following is a specification.

Some phonographs are provided with tubular mandrels which may be slipped on and off the arbor of a phonograph and have phonograph records tubularly engaged with them.

My invention relates to such a mandrel made capable of expanding and contracting for the purpose of respectively securing and releasing a phonograph record.

In the accompanying drawings: Figure 1 is a side view of a mandrel embodying my improvement. Fig. 2 is a section through a portion of the circumference to illustrate the means of connecting segments which are comprised in the mandrel. Fig. 3 is a central longitudinal section of the mandrel. Fig. 4 is a transverse section of a mandrel taken at the plane of the line 4—4 in Fig. 3. Fig. 5 is a transverse section of a mandrel taken at the plane of the line 5—5 in Fig. 3.

Similar letters of reference designate corresponding parts in all the figures.

A designates the body of the mandrel. It is of tubular form and made of a number of longitudinal segment shaped sections a^1 . While these sections may be of any desired number, I have only shown three in this example of my invention, each of the three forming a third of the body. The sections of the body are connected together at their longitudinal edges and in such a manner that they may yield independently so that the body as a whole may expand and contract. As here shown, a groove a^2 is formed in one of the longitudinal edges of each section a^1 and in this groove a spring a^3 is introduced. This spring consists of a strip of resilient metal and is bent longitudinally

into bow shape. Its middle portion fits in the groove a^2 and is retained there by a pin a^4 which extends transversely through the groove. The ends of the spring a^3 protrude into cavities a^5 formed in the opposite edge of an adjacent section a^1 and extending obliquely therein. The sections a^1 near their ends, are provided with a number of arc shaped grooves a^6 which are eccentric to the axis of the exterior of the mandrel body. Inside the end portions of these sections a^1 rings a^7 are inserted and these are provided externally with bosses or projections a^8 which extend into the arc shape grooves a^6 formed in the end portions of the sections a^1 of the mandrel body. The engagement of these bosses a^8 with the grooves a^6 keeps the rings a^7 in place lengthwise of the mandrel body. Preferably the grooves a^6 will be flared in reverse directions at the two ends of the sections a^1 of the mandrel body so that if the rings a^7 are turned in opposite directions, the mandrel body will be expanded at both ends.

What I claim is:—

1. A phonograph record mandrel having in combination an expansible tubular body composed of longitudinal segments having cam shaped surfaces in their interiors, and means at the ends of the body for coacting with said cam shaped surfaces.

2. A phonograph record mandrel having in combination an expansible tubular body composed of longitudinal segments having cam shaped surfaces in their interiors, and rings at the ends of the body provided with means for coacting with said cam shaped surfaces.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

WALTER C. RUNGE.

Witnesses:

FRANK E. RAFFMAN,
PAUL H. FRANK.