

T. W. MILLER.
 PROCESS OF MANUFACTURING SOUND PRODUCING INSTRUMENTS.
 APPLICATION FILED FEB. 11, 1916.

1,185,601.

Patented May 30, 1916.

Fig. 1.

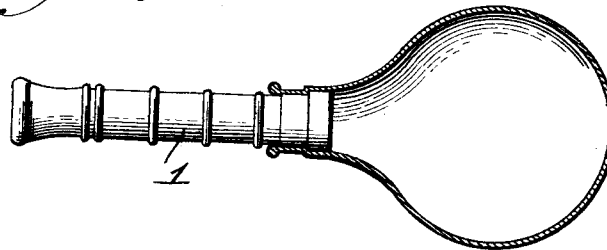


Fig. 2.

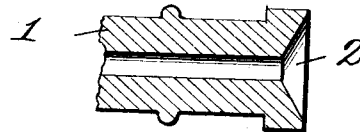


Fig. 3.

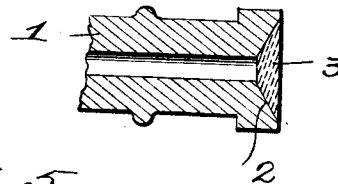


Fig. 5.

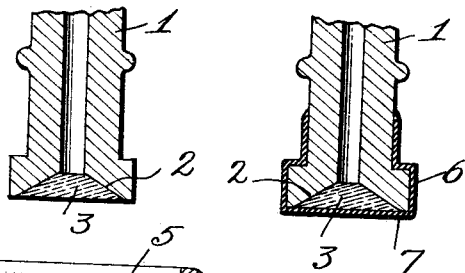


Fig. 6.

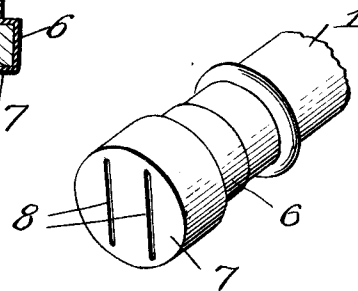


Fig. 4.

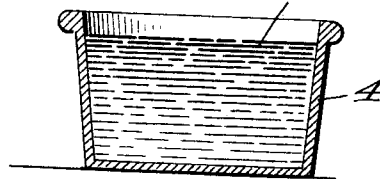
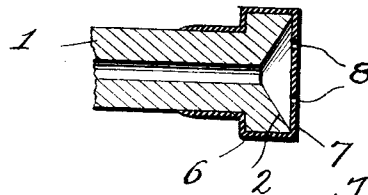


Fig. 7.



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UNITED STATES PATENT OFFICE.

THOMAS W. MILLER, OF ASHLAND, OHIO, ASSIGNOR TO THE FAULTLESS RUBBER COMPANY, OF ASHLAND, OHIO, A CORPORATION OF OHIO.

PROCESS OF MANUFACTURING SOUND-PRODUCING INSTRUMENTS.

1,185,601.

Specification of Letters Patent.

Patented May 30, 1916.

Application filed February 11, 1916. Serial No. 77,749.

To all whom it may concern:

Be it known that I, THOMAS W. MILLER, a citizen of the United States, residing at Ashland, in the county of Ashland and State of Ohio, have invented certain new and useful Improvements in Processes of Manufacturing Sound-Producing Instruments, of which the following is a specification.

My invention relates to the manufacture of sound producing instruments, and has for its object to provide a novel method of producing the articles disclosed in Letters Patent No. 1,146,640, granted to me July 13, 1915, for improvements in reeds for toys. In said Letters Patent, the reed comprises a tubular sleeve of rubber and a cap integral therewith, the latter being slitted or cut to provide a vibrating portion, said reed being formed separate and then attached in any suitable manner to the tube with which it is to be employed.

My present invention embodies a novel process of forming the reed upon the end of the tube by the well known rubber dipping process, and embodies certain novel features, as will be hereinafter more definitely pointed out and claimed, reference being had to the accompanying drawing, in which:—

Figure 1 is a side elevation of a tube having my improved reed applied thereto, a toy balloon also being shown in section applied thereto. Fig. 2 is a sectional view of that end of the tube which is to receive the reed, showing the reed-receiving end concaved. Fig. 3 is a view similar to Fig. 2, showing said concaved end filled with a removable substance, whereby a temporary imperforate flat outer end is provided. Fig. 4 shows the tube end of Fig. 3, and a conventional bath of rubber, into which the tube is in position to be dipped. Fig. 5 is a view of said tube end after being dipped in the bath, and showing the reed formed thereon by said dipping process. Fig. 6 is a perspective view of the tube end, showing the reed in position thereon and slitted for use. Fig. 7 is a sectional view of the tube end showing the reed formed thereon, and also showing the concaved end of the tube with the filling removed.

Similar reference numerals denote corresponding parts in the several views.

In the said drawing, the reference numeral 1 denotes a tube of any suitable construction, usually formed of wood. As shown in the drawing, the reed-receiving end of this tube is concaved at 2 in the usual manner, and, as shown in Fig. 3, prior to being dipped in the rubber bath, hereinafter described, this concaved end of said tube is filled with a removable substance 3, such for instance as wax, which readily may be removed by heat. With the concaved end thus filled with this removable substance in such manner as to form a flat outer surface, as shown, the tube is ready to be dipped into the bath 4 containing the usual rubber solution 5. A proper number of dips into said bath will produce upon the end of the tube 1 a coating of rubber, which forms a tubular sleeve 6 and a cap 7 integral therewith, the two constituting a reed, as in my Letters Patent hereinbefore referred to. This reed is then vulcanized without removal from the tube, the cap 7 is then slitted, as shown at 8 in Fig. 6, and the filling 3 removed by heat, or in any other suitable manner, when the device will be left in the condition shown in Fig. 7, which is the completed condition ready for use.

By my improved process, I am enabled readily to form the reed upon the end of its receiving tube in such manner that it will require no fastening means to retain it in place, the dipping process causing the sleeve of the reed to adhere most firmly to the tube end. Furthermore, this process materially simplifies the manufacture of the article otherwise, as it dispenses with the formation and handling of the same, as is required in my Letters Patent hereinbefore referred to.

While I have shown the cap 7 of the reed as slitted at 8 to provide the vibratory member, I do not wish to limit myself to the said specific construction, as it may be cut away at this point in any desired manner, the sole object being to provide a vibrating element at this point.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent, is:—

1. The process of making sound producing instruments, which consists in forming a vibratory member across the end of the tube which forms part of said instrument

by dipping said tube in a rubber solution, and then vulcanizing said vibratory member while in position on said tube.

2. The process of making sound producing instruments, which consists in dipping
5 the end of the tube which forms part of said instrument in a rubber solution to form a reed thereon, then vulcanizing said reed while on said tube, and finally cutting the
10 cap of said reed to form a vibratory member.

3. The process of making sound producing instruments, which consists in filling the

concaved end of the tube which forms part of said instrument with a removable sur- 15
face to provide a temporary flat surface at said end, then dipping said end in a rubber solution to form a reed thereon, then vulcanizing said reed while on said tube, and finally cutting the cap of said reed to form a 20
vibratory member, the removable substance being removed prior to use.

In testimony whereof I hereunto set my hand this 7th day of February, 1916.

THOMAS W. MILLER.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents,
Washington, D. C."