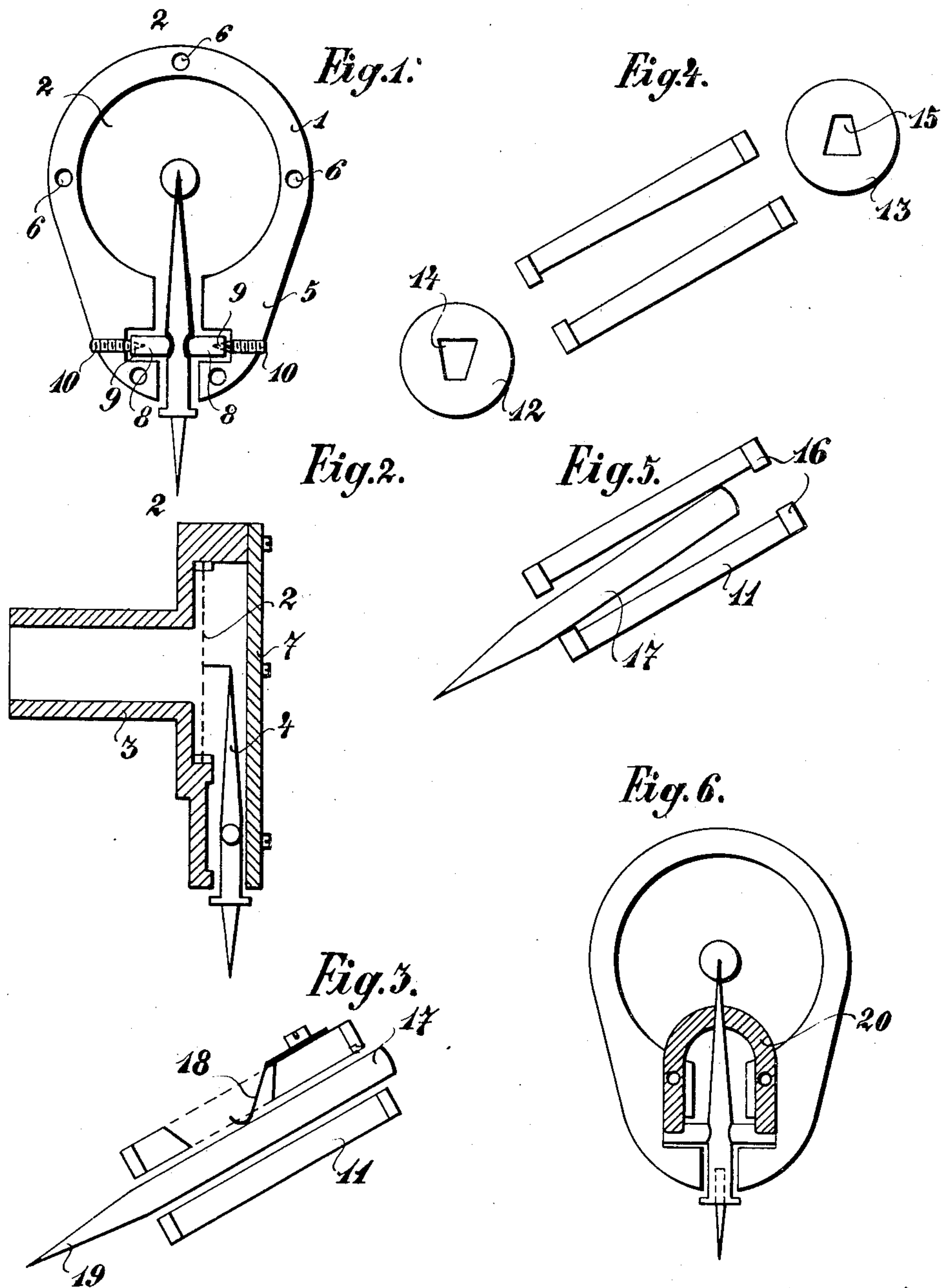


No. 831,995.

PATENTED SEPT. 25, 1906.

E. RUNGE.  
REPRODUCER FOR TALKING MACHINES.

APPLICATION FILED NOV. 10, 1904.



WITNESSES:

Paul Lange  
Carl Thehaine

INVENTOR:

Edward Runge



# UNITED STATES PATENT OFFICE.

EDUARD RUNGE, OF BERLIN, GERMANY, ASSIGNOR TO JEAN PAUL HENRI DE LA CROIX, OF BERLIN, GERMANY.

## REPRODUCER FOR TALKING-MACHINES.

No. 831,995.

Specification of Letters Patent.

Patented Sept. 25, 1906.

Application filed November 10, 1904. Serial No. 232,224.

*To all whom it may concern:*

Be it known that I, EDUARD RUNGE, manufacturer, a subject of the German Emperor and a resident of 242 Friedrichstrasse, Berlin, in the Kingdom of Prussia, German Empire, have invented a certain new and useful Reproducer for Talking-Machines, of which the following is a specification.

My invention relates to a recorder and reproducer attachment for talking-machines of the usual construction.

One of the objects of the invention is the provision of means for automatically adjusting the style-holder.

A further object of the invention is the provision of means for the reception of the style in the holder and for maintaining the same in a locked position.

Other objects of the invention are the provision of means simple in construction, durable, reliable, and inexpensive in the manufacture.

With these and other objects in view the invention consists in the construction, combination, and arrangement of parts, as will be hereinafter referred to and as illustrated in the accompanying drawings, which disclose the preferred embodiment thereof.

Similar reference characters indicate corresponding parts throughout the several views.

In the drawings, Figure 1 is a front view of the speaking attachment, the cover being removed. Fig. 2 is a section on the line 2 2, Fig. 1. Fig. 3 is a longitudinal section, drawn to an enlarged scale, of the style guide or socket. Fig. 4 is a like view of a second form of guide having a conical interior. Fig. 5 is a like view of a third form of guide having an internally-projecting top portion. Fig. 6 is a front view of a speaking attachment similar to that shown in Fig. 1, but having a magnet provided.

Referring more particularly to Figs. 1 and 2, the new speaking or reproducing attachment consists of the casing 1, in which the diaphragm 2 is secured, and of the tubular stem or extension 3 at the back of the casing 1. The top of the style-holder 4 is connected in the usual manner with the diaphragm 2. The casing 1, otherwise round, has an enlargement 5 below, and holes 6 are provided to receive the screws which hold the cover 7.

The style-holder is made in one piece and

consists of a cross, the transverse bar 8 of which is mounted on the points 9 of pins 10, screwed into the casing 1. Instead of this arrangement any other suitable means of mounting the bar 8 may naturally be employed. The pins 10, like the bar 8, are of rigid non-resilient material, so that the style-holder 4 has no other motion than the oscillating motion about the axis of the bar 8.

The bottom end of the style-holder is in the form of a cylindrical guide or socket 11, to the ends of which present the actual holding or gripping members 12 13. The latter consist, preferably, as shown, of round disks provided with rhombic apertures 14 15, pierced in reverse directions. In Fig. 3 the inner walls of the socket 11 are parallel to each other, whereas in the socket shown in Fig. 4 the walls are conical, tapering upward, so that projecting portions 16 at the top of the socket, such as are shown in the improperly-constructed socket, Fig. 5, are obviated. The top or rear end of the style or needle 17 is thus prevented from butting against the interior of the socket and taking up an incorrect position. The socket 11 is also provided with a suitable safety-stop or pressing device. This may consist, as shown in Fig. 3, of a spring 18, projecting through the wall of the socket and bearing against the needle 17, so that the latter when once inserted in the socket cannot fall out before the point 19 of the needle is adjusted on the disk of the machine. In place of a mechanical stop device the needle 17 or the socket 11 may be magnetized or be controlled by a magnet. The latter arrangement is shown in Fig. 6, where a magnet 20 acts on the needle 17 and by attraction prevents it from falling out of the socket after being once inserted. After the cover 7 has been screwed on, the whole of the parts are effectually closed in, even in the case of a style-holder of considerable length. There is thus no danger of the device being disturbed by an accidental blow or the like, nor can dust or dirt easily obtain entry.

It must be clearly understood that I do not desire to restrict myself to the precise construction and arrangement of the parts shown, as the details of construction may be greatly varied without departure from the essential features of the invention.

I claim as new—

In a reproducer attachment, a casing having an elongated reduced extension, a diaphragm mounted above the latter and in  
5 said casing, adjustable pins at opposite sides and arranged transversely in said extension, a style-holder having a socketed terminal, and transverse bars intermediate the extremities thereof, said bars adapted to frictionally en-  
10 gage said pins for oscillatory movement of

the holder in a direction at right angles to its axial line, a style mounted in the socket, and means for retaining the style in the socket.

In witness whereof I have hereunto signed my name, this 22d day of October, 1904, in 15 the presence of two subscribing witnesses.

EDUARD RUNGE.

Witnesses:

WOLDEMAR HAUPT,  
HENRY HASPER.