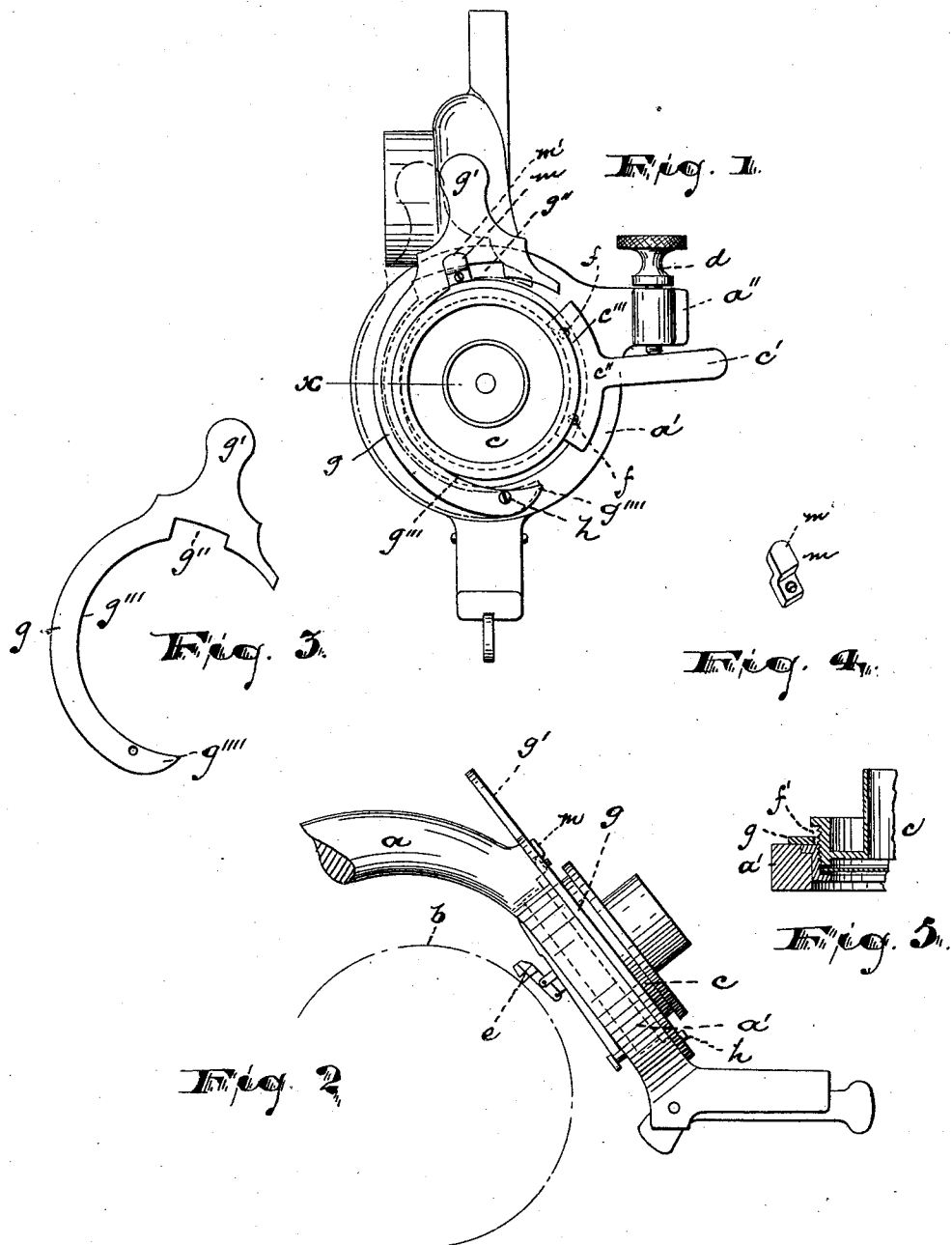


(No Model.)

V. H. EMERSON.
DIAPHRAGM CLAMP FOR PHONOGRAPHS.

No. 567,738.

Patented Sept. 15, 1896.



WITNESSES:

INVENTOR

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UNITED STATES PATENT OFFICE.

VICTOR H. EMERSON, OF NEWARK, NEW JERSEY, ASSIGNOR TO THE UNITED STATES PHONOGRAPH COMPANY, OF SAME PLACE.

DIAPHRAGM-CLAMP FOR PHONOGRAPHS.

SPECIFICATION forming part of Letters Patent No. 567,738, dated September 15, 1896.

Application filed December 20, 1895. Serial No. 572,753. (No model.)

To all whom it may concern:

Be it known that I, VICTOR H. EMERSON, a citizen of the United States, residing at Newark, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Diaphragm-Clamps for Phonographs; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

The object of this invention is to facilitate and render more convenient the operation of removing, replacing, and adjusting the diaphragm in and from its arm or carrier in the phonograph, whereby a material saving of time is effected, especially when the operator is before an audience and desires to reproduce audible expressions immediately after they are rendered, all in the presence of said audience.

The invention consists in the improved phonograph, in the improved diaphragm arm or carrier for the same, and in the arrangements and combinations of parts, all substantially as will be hereinafter set forth, and finally embraced in the clauses of the claim.

Referring to the accompanying drawings, in which like letters indicate corresponding parts in each of the figures, Figure 1 is a plan of a diaphragm arm or carrier of a phonograph embracing my improvements. Fig. 2 is a side elevation of the same. Fig. 3 is a detail plan of a clamp or holder for securing the diaphragm in position on the arm or carrier. Fig. 4 is a perspective view of a clip for holding the free end of said clamp or holder, and Fig. 5 is a sectional detail on line *x*.

In said drawings, *a* indicates an ordinary diaphragm-holding arm or carrier having the usual relation with the cylinder *b*. (Shown in outline in Fig. 2.) At its forward end the said arm is provided with the annular seat *a'*, in which the diaphragm *c* may be arranged. Said diaphragm *c* is also of usual construction. It may be such as will engrave the cylinder *b* when audible sounds are directed against it or will be operated upon by a cyl-

inder already engraved to effect a reproduction of such sounds. The said diaphragm *c* is provided with an outwardly-projecting finger-piece *c'*, adapted to serve in lifting said diaphragm from its seat. It also acts as a guide, in connection with an adjusting-screw *d*, by which the said diaphragm may be directed into proper relation to its seat to bring the retracing or reproducing point in proper operative position. It also acts somewhat similarly in connection with the terminal projection *g'''* of the clamp *g*, as will be hereinafter described. The adjusting-screw *d* has its bearings in an extension *a''* of the arm *a*, said extension being provided with a female thread to receive said screw, as will be understood. Said finger *c'* is formed in a plate *c''*, integral with a segmental flange *c'''*, said plate being fastened by screws *f* upon the diaphragm, so that the concavous edge of the segmental portion will lie against the peripheral sides of the diaphragm and on a shoulder thereof, and thus, when screwed, be firmly and with exactness held in position in a plane with a clamp next to be referred to. At the opposite side of the annular portion of the arm *a* the same is provided with a semiannular or curved clamp *g*, consisting of a piece of sheet metal corresponding in thickness, more or less closely, with the thickness of the plate *c''*. Said clamp is adapted to be moved laterally with respect to the diaphragm to and from the peripheral sides of the same to enter the groove or peripheral recess *f* of the said diaphragm and provide a holding-lip for the same, as shown in Fig. 5. At one end, as at *h*, said curved clamp is pivoted on the face of the arm, and at its opposite end it is provided with an outwardly-projecting finger extension or handle *g'* and also a recess *g''* in from its inward concavous edge *g'''*. The annular portion *a'* is also provided with a limiting-clip *m*, Figs. 1 and 4, which is seated so as to lie in the recess *g''* and limit the oscillating movements of the clamp to and from the diaphragm. Said clip is bent as shown in Fig. 4, and at its projecting end overlies the clamp *g*, so that the latter is prevented from being raised from the face of the arm and thus being bent or rendered inoperative. By simply turning the clamp on

its pivot away from the diaphragm the latter can be raised from its seat and be removed. A reverse action after inserting the diaphragm in its seat holds the said diaphragm with sufficient firmness and security in place. The clamp extends a little beyond its pivot and forms at g''' a guide or stop to engage the nearest end of the segmental portion c''' of the plate c'' lying in plane therewith when the diaphragm is employed in recording sound in connection with the ordinary style. The clamp is held where placed in any of its adjustments by friction, the several parts being close-fitting to secure a limited binding sufficient for the purpose. The projecting arm m' of the clip bears on the clamp g with a resilient pressure whereby, an even frictional contact is obtained at the free or handled end thereof.

I am aware that the construction of the device can be modified and the arrangement of parts varied without departing from the invention, and consequently I do not wish to be understood as limiting myself by positive terms employed in describing the construction, excepting as the state of the art may require.

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

1. The combination, in a phonograph, with the arm, having the annular portion and the diaphragm, of a diaphragm-clamp comprising a curved piece pivoted to said arm and having a movement to and from the periphery of the diaphragm, substantially as and for the purposes set forth.

2. The combination, in a phonograph, with the diaphragm-arm a , and diaphragm c , of the pivoted and curved clamp g , and clip m , substantially as and for the purposes set forth.

3. In a phonograph, the combination with the diaphragm-arm a , and diaphragm c , of a

pivoted, curved and recessed clamp and a clip m , arranged in the recess of said clamp, substantially as set forth.

4. In a phonograph, the combination with the diaphragm-arm a , and diaphragm c , of a pivoted diaphragm-clamp, arranged and operating, substantially as set forth.

5. In a phonograph, the combination with the diaphragm-arm a , and diaphragm c , of a diaphragm-clamp arranged on said arm, and having a limited movement to and from holding contact with the diaphragm, substantially as and for the purposes set forth.

6. In a phonograph, the combination with the diaphragm-arm, having the annular portion in which is seated the removable diaphragm, of a clamp pivoted on said arm at one end, intermediately curved to engage the periphery of the diaphragm, and at the opposite free end having a finger g' and means for holding said free end down upon said arm, substantially as set forth.

7. In a phonograph, the combination with the diaphragm-arm, a , and diaphragm c , of a pivoted clamp g , having a finger-piece g' , recess g'' , concavous edge g''' , and an extension g'''' , serving as a diaphragm-stop, substantially as set forth.

8. In a phonograph, the diaphragm-clamp, consisting of the concavous portion g , having the outwardly-extending finger-piece g' , a limiting-recess g'' and a diaphragm-stop extension g'''' , near its pivoted end, said parts being combined substantially as set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 12th day of December, 1895.

VICTOR H. EMERSON.

Witnesses:

CHARLES H. PELL,
C. B. PITNEY.