

1,058,284.

Patented Apr. 8, 1913.

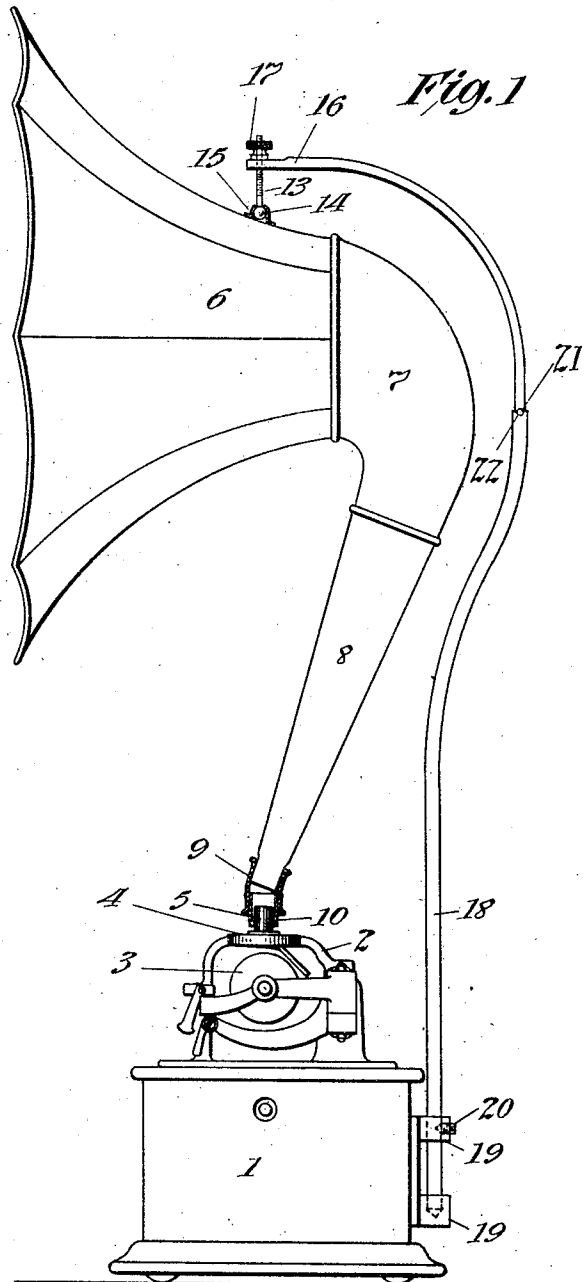
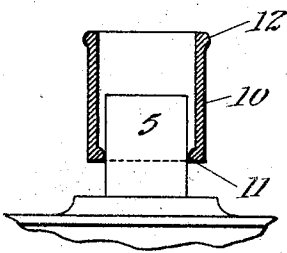


Fig. 2



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UNITED STATES PATENT OFFICE.

PETER WEBER, OF ORANGE, NEW JERSEY, ASSIGNOR, BY MESNE ASSIGNMENTS, TO
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PHONOGRAPH.

1,058,284.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, PETER WEBER, a citizen of the United States, and a resident of Orange, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Phonographs, of which the following is a description.

My invention relates to phonographs and particularly to phonograph horns and supports therefor.

In order to secure the best results from a phonograph it has been found necessary to make use of horns of relatively large dimensions. Such horns are usually supported from the phonograph cabinet by some form of horn crane so that they extend outward in front of the phonograph to a considerable distance. The objections to this form of apparatus are numerous; for example, a horn so supported takes up a large amount of room, and it has a tendency to upset the phonograph or to twist and bend the parts thereof. Such a horn can only be partially supported from the horn crane, and it is necessary in order to secure stability that a considerable portion of its weight be borne by the reproducer or recorder of the phonograph, and this to a considerable extent interferes with the movements of the phonograph carriage, and imposes wear on the fine feed screw. The horn extending out to the front is often in the way of the operator, and it is difficult and almost impossible to direct such a horn so supported toward any given point without turning the phonograph bodily around. Again, it is difficult to replace the cover upon the cabinet, after the instrument has been used, as the horn is always more or less in the way, and it is often found necessary to entirely remove the horn from the phonograph and crane before the cover can be placed upon the cabinet.

It is the object of my invention to do away with the objections which are present in the horns and supports therefor now in common use, and I obtain these results by making my improved horn of such form that it may be supported above the phonograph instead of extending out in front thereof, as is the common practice. By making the horn of my improved form I am enabled to support it from a point vertically above its center of

gravity without the resulting instability which would be caused if the horns now in use were so supported. It is possible to do this with my improved horn for the reason that its center of gravity is at a relatively considerable distance beneath the point of support. My improved horn is loosely connected with the reproducer and none of its weight is borne thereby, as has been the case with horns supported in the old way, and it therefore does not interfere in any way with the movements of the carriage. The horn being entirely supported from above at a point vertically over its center of gravity can readily be turned in any direction so that the sound may be directed to any point without the necessity of turning the phonograph about to a new position upon the table or other support, and the horn being suspended above the cabinet takes up but little space in a room, and need not be removed in order to replace the cover upon the cabinet, but may be readily pushed to one side to permit the placing of the cover in position and the horn need not be removed from its crane when the phonograph is out of use, but may remain suspended from its crane at all times, and when it is desired to operate the phonograph it is only necessary to remove the cover and connect the lower end of the horn to the reproducer.

With the above and related objects in view, my invention consists in the parts, improvements and combinations hereinafter set forth and claimed.

In the accompanying drawing, forming a part of this specification, and wherein the same reference numerals are uniformly used to designate the same parts, Figure 1 is an end elevation of a phonograph provided with my improved form of horn and horn support, the connection between the tube of the reproducer and the horn being shown in section, and Fig. 2 is a view partly in section and partly in side elevation of the reproducer, and a portion of the means for connecting the horn thereto.

1 represents the phonograph cabinet and 2 the carriage which is movable transversely of the mandrel 3 and supports the reproducer 4. Of course instead of a reproducer, a recorder may be used, as is well understood, the term "sound box" used in the

claims being intended to designate either of these devices. In the preferred form of my invention, the reproducer or recorder is supported horizontally in the carriage 2, so that the neck 5 through which the sound issues therefrom is substantially vertical.

My improved horn comprises a bell 6, a tapering elbow 7, secured to the smaller end of the bell, and a tapering tone arm 8 secured to the smaller end of the elbow. The longitudinal axis of the tone arm and the longitudinal axis of the bell if continued would meet in an angle which is preferably somewhat less than a right angle. The tone arm is loosely and flexibly connected to the neck 5 of the reproducer by any suitable means. The connecting means which I have shown comprises a flexible rubber tube 9 and a short cylindrical tube 10, the inner diameter of which is somewhat larger than the outer diameter of the neck 5 of the reproducer, and which is provided with an inwardly extending bead or flange 11 at its lower end, which fits fairly closely about the reproducer tube but not so close as to bind thereon. It will be evident that by reason of the bead 11 this cylindrical tube 10 may be tilted with respect to the reproducer neck 5 through a considerable angle. An outwardly extending bead or flange 12 is formed on the upper end of the tube 10 over which the rubber sleeve 9 frictionally engages. Supporting means is provided for this horn at a point directly in line with the center of gravity thereof. It is desirable that the horn shall be capable of being turned upon this supporting means so as to face in any desired direction and at the same time, that sufficient stability shall be secured to retain the horn facing in any direction. I have therefore made the support in the form of a rod 13 provided with a ball 14 which fits within the socket piece 15, secured to the bell 6. This rod 13 is supported by the upper end 16 of a horn crane. As shown, the rod 13 is threaded at its upper end and after passing through the end 16 of the upper portion of the crane it has a nut 17 screwed thereon, but it is evident that other forms of connection may be used. The lower portion of the horn crane comprises a substantially vertical rod 18, which is secured in socket pieces 19 at the back of the phonograph cabinet and held in place by set screw 20. It is to be understood, however, that other forms of cranes and other means of connecting the crane to the phonograph may be used if desired. The portion 18 of the crane is hollow and the upper part 16 of the crane fits therein and is held from rotation relatively to the part 18 by means of a pin 21 passing through the upper portion 16 of the crane, and fitting in shallow notches 22 in the upper end of the crane

section 18. As is shown in the drawing, the lower end of the tone arm, which is adapted for connection with the recorder or reproducer 2 is directly beneath the support 13 and the center of gravity of the horn.

Having now described my invention, I claim:

1. In a phonograph, the combination with a sound box, of a horn having a forwardly directed bell, means for suspending said horn from a point in substantially vertical alinement with said sound box, said means permitting oscillation of the horn about a substantially vertical axis and a connection between the smaller end of the horn and said sound box, said connection likewise permitting oscillation of the horn about said axis, substantially as described.

2. In a phonograph, the combination with a sound box, of a horn having a forwardly directed bell, means for suspending said horn from a point vertically above said sound box, said means permitting oscillation of the horn about a substantially vertical axis and a sliding connection between the smaller end of the horn and said sound box, said connection likewise permitting oscillation of the horn about said axis, substantially as described.

3. In a phonograph, the combination with a sound box having a vertically disposed neck, of a horn having a forwardly directed bell, means for suspending said horn from a point vertically above said neck, said means permitting oscillation of the horn about a substantially vertical axis, and a yielding connection between the smaller end of said horn and said neck, substantially as described.

4. In a phonograph, the combination with a sound box having a vertically disposed neck, of a horn having a forwardly directed bell, means for freely suspending said horn from a point in a substantially vertical line passing through the center of gravity of said horn and the axis of said neck, and a yielding connection between the smaller end of said horn and said neck, substantially as described.

5. In a phonograph, the combination with a sound box, of a horn having a forwardly directed bell, means for suspending said horn from a point vertically above said sound box and for adjusting the vertical position of said horn, said means permitting oscillation of the horn about a substantially vertical axis, and a connection between the smaller end of said horn and said sound box, said connection likewise permitting oscillation of the horn about said axis, substantially as described.

6. In a phonograph, the combination with a sound box having a neck, of an upwardly and forwardly extending horn, means for suspending the horn from above, and a flexi-

ble connection between the lower end of the
horn and the sound box neck comprising a
flexible sleeve and a tube fitting over the
sound box neck and provided with an in-
5 wardly extending flange or bead, substan-
tially as described.

This specification signed and witnessed
this 12 day of Oct., 1907.

PETER WEBER.

Witnesses:

FRANK D. LEWIS,
CHARLES F. ROBSON.

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