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PATENTED DEC. 3, 1907.

H. B. BABSON & A. HAUG.
TALKING MACHINE.

APPLICATION FILED FEB. 7, 1905.

2 SHEETS—SHEET 1.

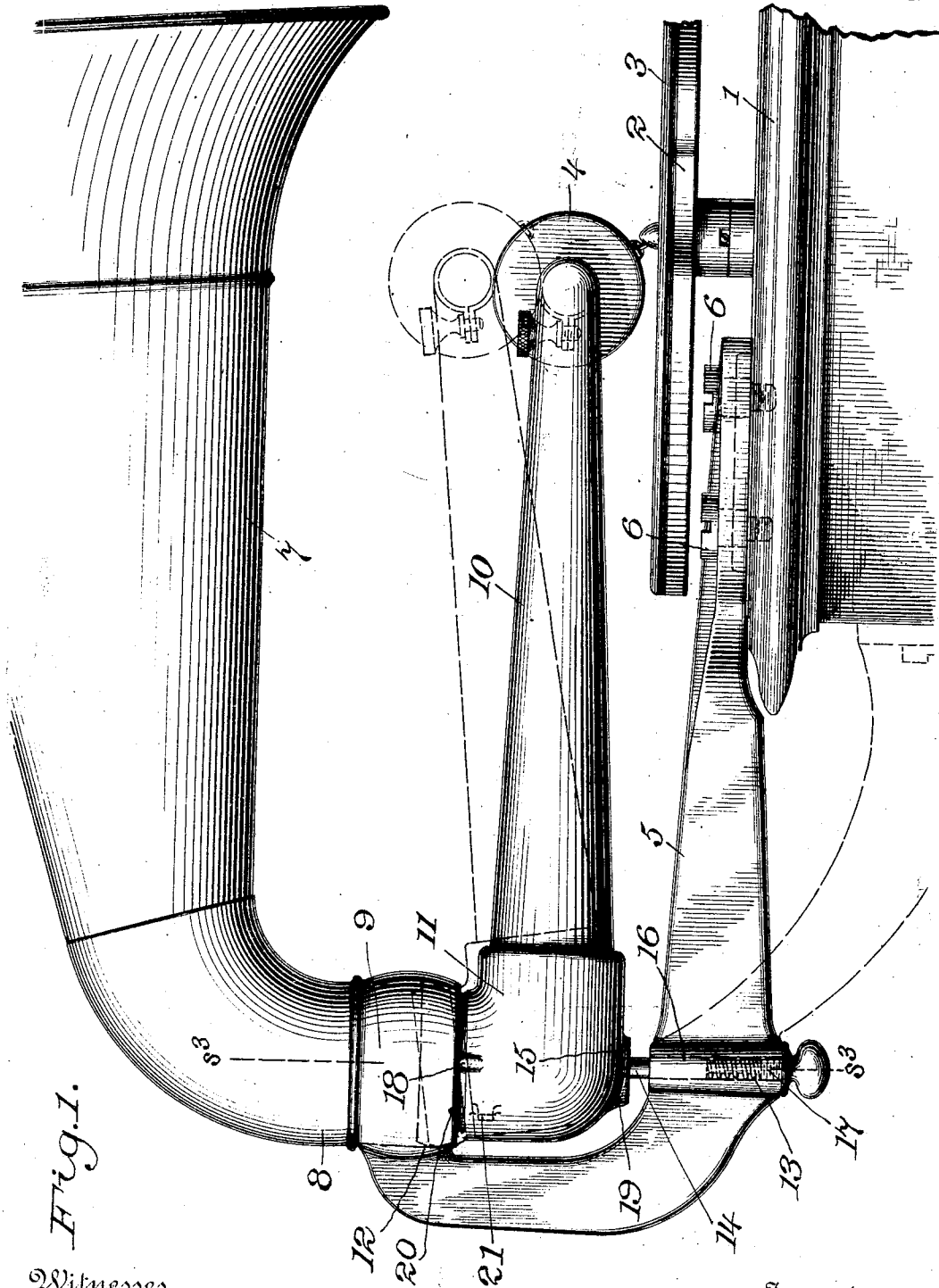


Fig. 1.

Witnesses
Frank O'Connor
J. E. Pearson

Inventors,
Henry B. Babson
Andrew Haug
By their Attorney
W. H. Humphreys

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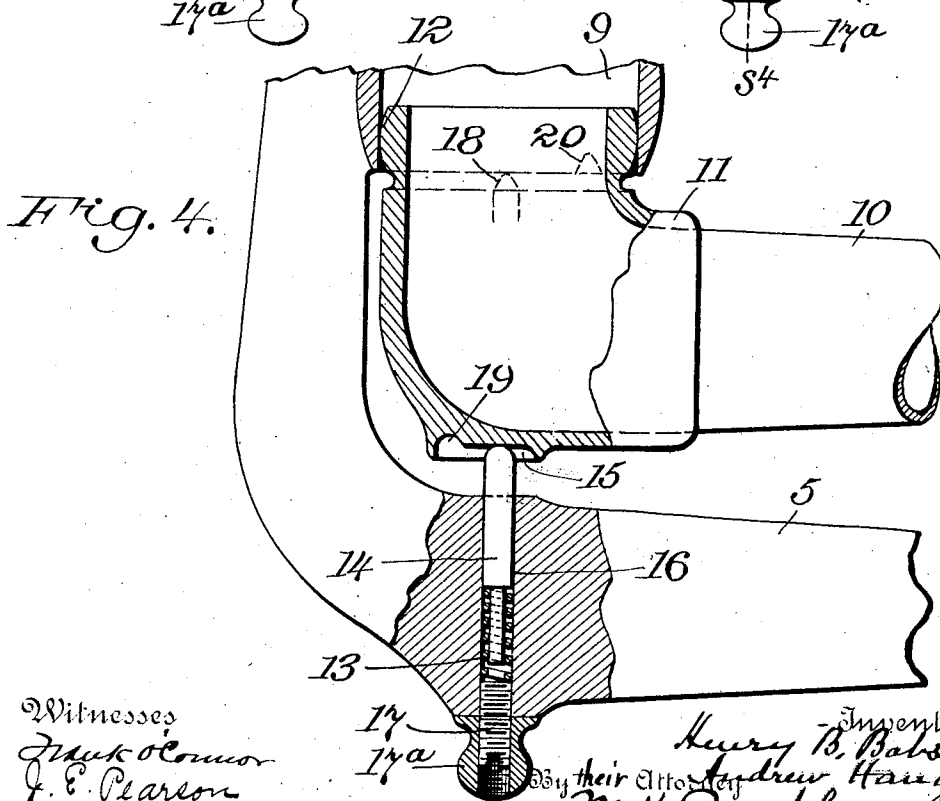
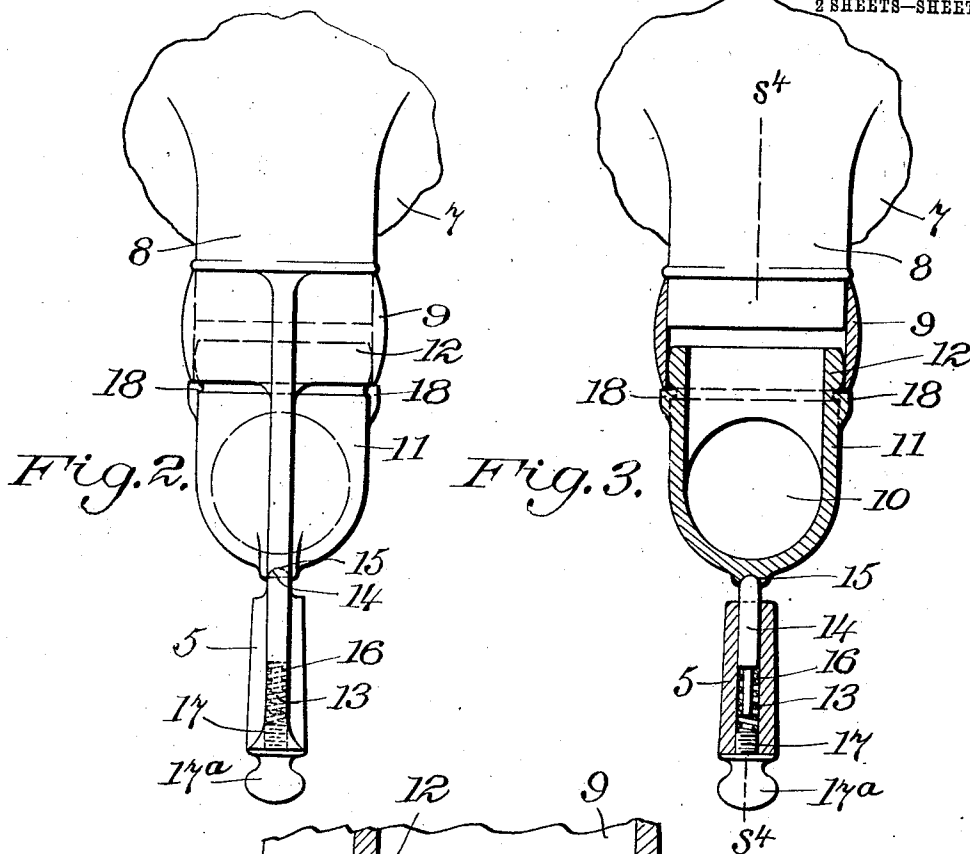
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J. E. Pearson

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Henry B. Babson
Andrew Haug
By their Attorney
W. H. Humphreys

UNITED STATES PATENT OFFICE.

HENRY B. BABSON AND ANDREW HAUG, OF NEW YORK, N. Y., ASSIGNORS TO UNIVERSAL TALKING MACHINE MANUFACTURING COMPANY, A CORPORATION OF NEW YORK.

TALKING-MACHINE.

No. 872,783.

Specification of Letters Patent.

Patented Dec. 3, 1907.

Application filed February 7, 1905. Serial No. 244,573.

To all whom it may concern:

Be it known that we, HENRY B. BABSON and ANDREW HAUG, citizens of the United States of America, and residents of the borough of Manhattan, city, county, and State of New York, have invented certain new and useful Improvements in Talking-Machines, of which the following is a specification.

Our invention relates generally to talking machines and more particularly to supporting means for mounting the reproducer in operative relation to the horn. In certain types of machines of this class now in general use, provision is made for supporting the horn and reproducer independently of each other, the arrangement being such as to permit the horn to be swung around into any desired position while the reproducer is either in or out of operation, without disturbing the same and at the same time to permit free movement of the reproducer without such motion being transmitted to the horn. While such an arrangement affords many obvious advantages and has received general approval, objection is made to the particular forms of mechanism heretofore employed, owing to the large number of parts, the care and accuracy required in fitting and assembling the parts to insure proper coöperation and the general complication involved in the construction which renders it expensive, difficult to adjust and altogether unsatisfactory from the point of view of both the manufacturer and user.

The present invention is designed to obviate the objectionable features above pointed out in the production of a reproducer supporting arm and mounting therefor employing a minimum number of parts of a form suitable for being manufactured at a comparatively low cost, readily assembled or disconnected and so arranged as to co-act efficiently in permitting free movement of the reproducer and its ready adjustment in or out of operative relation to the sound record.

The accompanying drawings will serve to illustrate a device suitable for carrying our invention into effect. We wish it understood, however, that we do not limit ourselves to the particular mechanism or arrangement of parts shown, as various other devices may be employed operating in substantially the same manner to produce practically the same result.

In the drawings: Figure 1 is a view in side

elevation of a support for a sound reproducer, constructed in accordance with our invention, the same being shown applied to a well-known type of talking machine. Fig. 2 is a rear view thereof. Fig. 3 is a vertical section on the line s^3 , s^3 , of Fig. 1. Fig. 4 is a similar view taken on the line s^4 , s^4 , of Fig. 3.

Referring now to the drawings, 1 represents the casing of a well known form of talking machine, 2 the rotating table thereof, 3 the usual disk type of record upon the table, 4 the sound box or reproducer, 5 a rigid arm or bracket secured to the casing by screws 6, 6, or other fastening means, and 7 the horn, the small end 8 of which is removably fitted in a sleeve-like off-set 9, of the bracket 5, permitting the horn to be swung around in any position desired.

Interposed between and operatively connecting the reproducer and horn there is a sound conveyer in the form of a tubular taper arm 10, which serves to support the reproducer and at the same time forms a continuation of the sound chamber thereof. At the end adjoining the horn, the taper arm terminates in an elbow 11, which is shown as a casting having a portion 12, shaped to fit loosely within the sleeve-like off-set of the bracket 5, and thus mounted it is centered relatively to the smaller end of the horn. The sleeve serves merely as a guide for the taper arm, the elbow of which unites therewith to form in effect a ball and socket joint. The arm is supported by a spring 13, acting through a pin 14, the rounded end of which enters a groove 15, formed in the under side of the elbow, as best shown in Fig. 4. The spring and pin are seated in an opening or socket 16 of the bracket and form a yielding support upon which the arm is free to move both vertically and horizontally. The yielding action or tension of the spring may be varied by means of a screw 17, secured if desired by a lock nut 17^a. Rounded lugs 18, 18, formed at diametrically opposite points upon the elbow and bearing against the lower end of the guide sleeve, limit the action of the spring pin, which tends to force the elbow into the sleeve, and in addition to maintaining these parts in definite relation, serve as the fulcrum for the arm in its vertical movement.

In order to protect the reproducer when not in use, provision is made for locking the arm 10, at an angle such as is indicated by dotted lines in Fig. 1, in which position the

stylus clears the record. This is effected by forming a depression 19 at one end of the groove 15, in the elbow 11, into which depression the pin 14 is forced by the spring and yieldingly held, limiting the movement of the arm to motion about the same as an axis and preventing vertical movement thereof. As a means of further protecting the reproducer, its horizontal movement across the record is also limited by forming notches 20, 20, in the lower end of the guide sleeve, into which the lugs 18, are forced by the spring 13, yieldingly holding the arm, when swung around against further movement, the object being to prevent persons not familiar with the machine from placing the reproducer with the stylus in such position as to oppose movement of the record. If desired, a stop lug 21 may be cast upon the elbow, as indicated in dotted lines in Fig. 1, to serve the same purpose by coacting with the bracket.

In the operation of the machine, the reproducer is perfectly free to follow the groove in the record, the yielding support and guides coacting to permit both vertical and horizontal motion of the arm, with the least possible friction or resistance opposing such motion. When moving vertically, the arm rocks on the lugs 18 and the spring pin 14, riding in the groove 15, yields, as required, to permit free motion of the shaped portion of the elbow in the guide sleeve. When moving horizontally the arm 10, turns upon the spring pin as an axis and the lugs 18 and shaped portion of the elbow are given rotary motion relatively to the guide. To lock the reproducer in an elevated position above and clear of the record, it is only necessary to raise the arm 10, until the spring pin 14, snaps into the depression 19 of the groove in the elbow. The readjustment of the reproducer is effected by pressing the arm 10 downward until the spring pin yields and reenters the groove proper. The arm 10 may be either removed or secured in position by merely turning the screw 17 to adjust the pin 14 relatively to the groove 15.

The advantages of our invention will be apparent from the foregoing description.

Having, therefore, described our invention, we claim:

1. The combination of a sound reproducer, an arm carrying the reproducer and mounted free to move vertically and horizontally, and means for yieldingly locking the arm against vertical movement only, said means serving directly as a support for the arm.

2. The combination of a sound reproducer, an arm mounted free to move vertically and horizontally, and self-engaging locking means cooperating with the arm to check its vertical motion only, said locking means directly engaging the arm as a support therefor.

3. A support for a sound reproducer comprising a sound conveyer, and a relatively fixed support upon which the conveyer rests and freely moves, said conveyer being shiftable in such relation as to be held thereby in an inoperative position.

4. The combination of a sound reproducer, a tubular arm forming a continuation of the reproducer and movable therewith, a yielding support directly engaging the arm and permitting movement thereof in planes at right angles to each other, and means for limiting the arm to movement about the support as an axis.

5. The combination of a sound reproducer, an arm movable therewith, a support directly engaging the arm and permitting free movement thereof, and means for causing the arm when elevated to be yieldingly held by the support.

6. The combination of a sound reproducer, a rigid arm provided with requisite guides, a movable arm mounted in the guides, and a pin spring-seated in the rigid arm as a support for the movable arm, said movable arm having shaped portions adapted to interlock with the pin in certain positions of adjustment.

7. The combination of a fixed arm provided with requisite guides, a spring pin centered relatively to the guides, and a tubular arm terminating at one end in a reproducer and at the opposite end in an elbow fitted in the guides and having a groove of varying depth formed therein to cooperate with the pin.

8. The combination of a fixed arm provided with an annular guide recessed at diametrically opposite points, a movable arm fitted in the guide and terminating in a sound reproducer, oppositely disposed bearings upon the movable arm cooperating with the recessed guide, and means for supporting the arms operatively assembled.

Signed at New York, N. Y. this 30th day of January, 1905.

HENRY B. BABSON.
ANDREW HAUG.

Witnesses:

W. H. PUMPHREY,
M. G. CRAWFORD.