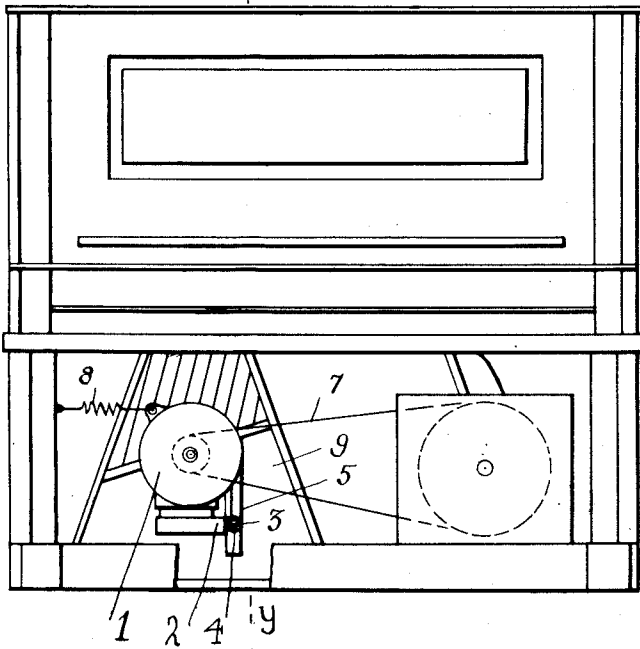


R. A. GALLY.  
ELECTRIC MOTOR SUSPENSION MEANS.  
APPLICATION FILED SEPT. 10, 1917.

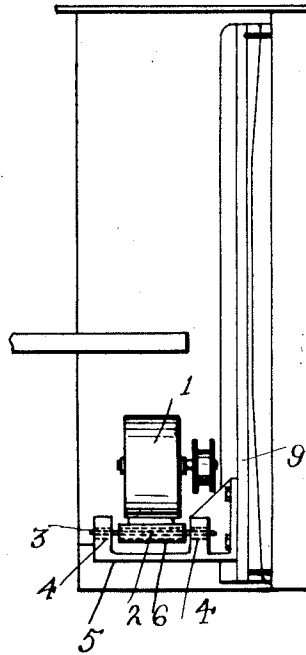
1,256,010.

Patented Feb. 12, 1918.

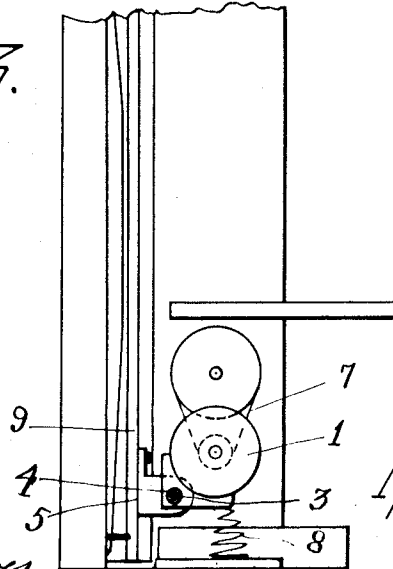
*Fig. 1.*



*Fig. 2.*



*Fig. 3.*



WITNESSES:  
Neschel C. Power.  
Wm Stanhope.

INVENTOR:  
Robt. A. Gally.

# UNITED STATES PATENT OFFICE.

ROBERT A. GALLY, OF CINCINNATI, OHIO, ASSIGNOR TO THE BALDWIN COMPANY, OF CINCINNATI, OHIO.

## ELECTRIC-MOTOR-SUSPENSION MEANS.

1,256,010.

Specification of Letters Patent.

Patented Feb. 12, 1918.

Application filed September 10, 1917. Serial No. 190,673.

*To all whom it may concern:*

Be it known that I, ROBERT A. GALLY, a citizen of the United States, residing at Cincinnati, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Electric-Motor-Suspension Means, of which the following is a specification.

Many attempts have been made to avoid noise and vibration of electric motors when used in pianos, accounting machines and other places where extreme quiet is demanded, some using leather saddles, spring supports and the like, with drawbacks of uncertain alinement of belts, etc., while in the present invention constantly alined mounting is used, which insulates vibrations and deadens or prevents all noises.

In the drawing, Figure 1 is a front view of the motor and its mounting inside a player piano, the motor having belt connection to the air pump of the player, and Fig. 2 is a view of the right side of the motor, taken at line X—Y of Fig. 1. Fig. 3 is another showing with vertical belting.

The motor 1 has suspension bearing 2 engaging and partly revoluble on a hanger shaft 3, which shaft is insulated from vibration, and sound transmission prevented by bushing 4 of deadening material as felt, rubber or cork placed between the hanger shaft 3 and its supports 5, and the deadening material may also be placed between the hanger shaft 3 and bearing 2, as at 6, or may be in both positions, although its use as at 4 only has the advantage of no wear or friction where the bearings 2 move on the shaft 3.

To still further deaden or "mute" the motor against vibration, and keep it responsive to the belt 7, a spring 8 is connected from a swinging part of the motor 1 to a stationary part of the structure; such spring may act in the same direction as the weight of swing of the motor, or opposite thereto, as in Fig. 3, and in either case aid to a quiet

floating condition of the motor similar to its state when suspended in the hands of the person testing it, when small motors are always more quiet than in any solid or usual fastened condition.

For quietness, the swinging arrangement of the motor preferably has its axis parallel to that of the motor, and this also enables it to act as a belt tightener, thus avoiding any extra idlers or tightener. In the main showing herein, Figs. 1 and 2 the motor drives a horizontal belt, and therefore the hanger shaft 3 is set to that side of the vertical line of the center of gravity of the motor toward the belt, the motor thus tipping away from the belt and securing a proper driving tension of the belt.

As all the wood parts of a piano are in glued connection to the case, and all give sympathetic vibration together, it has been very difficult to avoid the vibration or tone of the motor being resonated and given off by the case parts when the motor has been attached or mounted on any part of the case or woodwork. In the present structure the motor 1 has its mounting by the hanger shaft 3 with its supports 5 attached to the metal frame 9 of the piano, thus securing the greatest quietness possible, as the metal frame or iron plate 9 is properly constructed to give as little vibration as possible, a desirable musical tone of a piano being assisted by its wood parts augmenting the vibration of its strings.

Various modifications may be made and yet be subject to what I claim as my invention.

### Claim:

An electric motor and a bearing therewith, a piano having wooden parts and a metal plate, said bearing attached to said metal plate.

ROBT. A. GALLY.

Witnesses:

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N. KEISER.