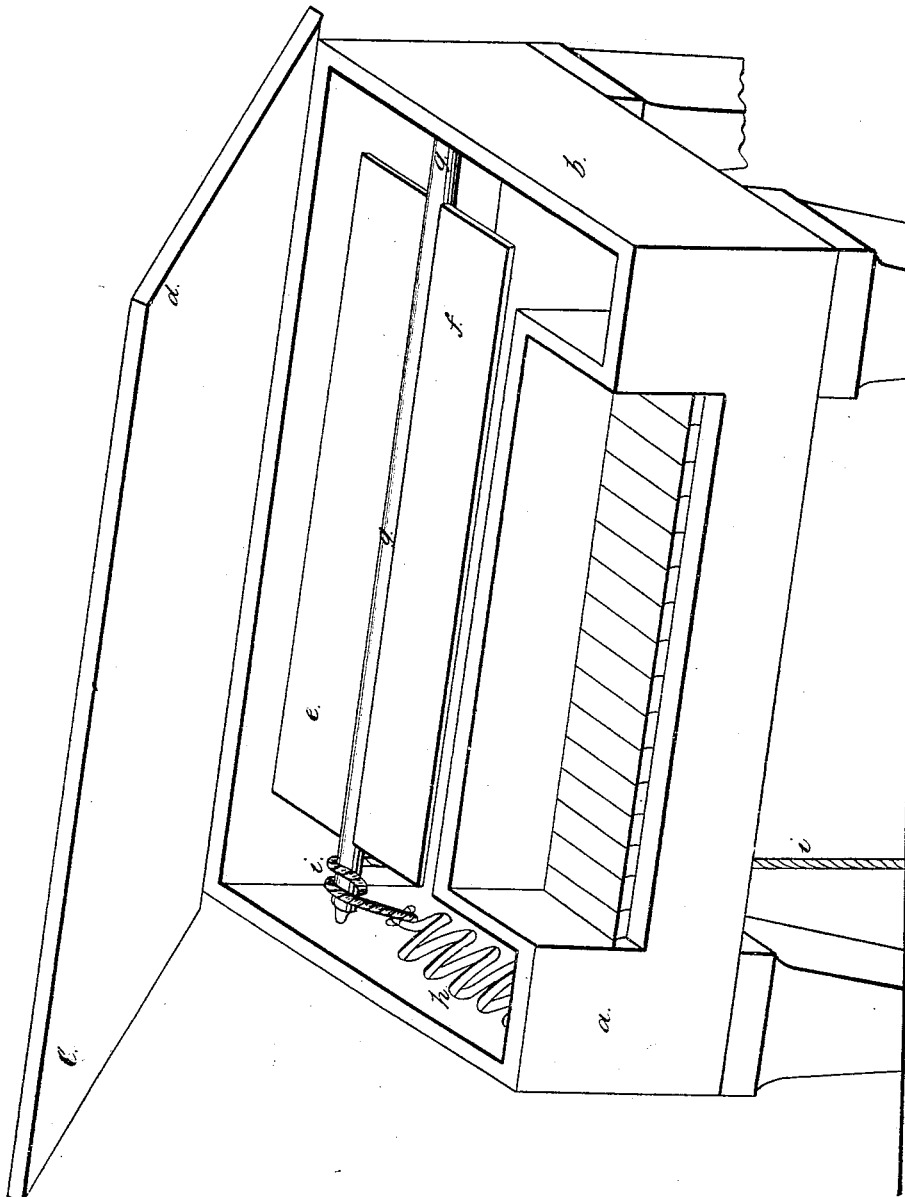


*R. W. Carpenter.*

*Reed Organ.*

*N<sup>o</sup> 48,366.*

*Patented Jun. 27, 1865.*



*Witnesses.*  
*J. A. Mairiner*  
*Wm. Hamble Hall.*

*Inventor.*  
*R. W. Carpenter*

# UNITED STATES PATENT OFFICE.

R. W. CARPENTER, OF NEW YORK, N. Y.

## TREMOLO ATTACHMENT.

Specification forming part of Letters Patent No. 48,366, dated June 27, 1865.

### *To all whom it may concern:*

Be it known that I, R. W. CARPENTER, of the city of New York, in the county and State of New York, have invented a certain new and useful Improvement in Musical Instruments; which I call a "Tremolo Attachment;" and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawing, making a part of this specification, and to the letters of reference marked thereon.

One of the principal ornaments of music, known as the "tremolo," and which is peculiarly effective with the voice, has hitherto been beyond the compass of instrumentation. The nearest approach to this peculiar effect in instrumental music has consisted in the rapid reiteration of a note instead of the general shake or vibration of the chord, and the best means of producing it that has been hitherto adopted, known as the "*vox humana*" of the organ, is a valve hung on a spring in an enlargement of the pipe in such a manner that the vibration of the spring rapidly closes and opens the passage, and breaks, as it were, the note into a number of pieces, instead of conveying it to the ear in an unbroken vibratory thrill. To accomplish this vibration or shake of the note as rendered by the human voice, the object of my invention is to impart to the column of air conveying the notes from a reed or other wind-instrument an undulation in addition to that of the note, so that the progress of the note to the ear may be illustrated by conceiving it to be carried over a waving, unsteady railway instead of a level and even one. To attain this end my invention consists in applying a revolving or swinging vane or beater to the instrument in such a position that when it is put in motion by a treadle or other suitable means the blows upon the air of the rapidly-moving beaters impart to the notes, without impairing their continuity, a tremulousness that is very similar to the tremolo of the voice.

To enable others skilled in the art to which it appertains to make and use my invention, I will proceed to describe its construction and operation with reference to the drawing, which represents the upper part of the case of an ordinary cabinet-organ, *ab*, with the lid *cd* raised to permit the rotation of the pair of vanes or beaters *ef* placed on the shaft *g*. This shaft is caused to revolve by the reciprocal action of the spring *h* and the string *i*, to which it is attached by making a few turns of the string around the shaft of the beaters and leading it to a treadle or other suitable means by which it may be worked. In playing passages where the tremolo may be desired, a slight motion of the foot causes the reaction of the spring to revolve the shaft and occasions a succession of blows by the beaters upon the air in the region of the swell, and produces the effect desired.

Having thus described what I believe to be the best means of carrying my invention into effect, I wish it to be understood that my invention is not restricted to the details or the manner of application that I have specified, and which I prefer simply because they are the most convenient to adopt, as the revolving beaters may be placed under the cover of the instrument in the space that is usually vacant behind the key-board and swell.

The beaters may be placed in the air-chamber or elsewhere to produce the required effect, or they may be rotated continuously by a double connection with the pedal or other means of operation.

I claim as my invention and desire to secure by Letters Patent—

The application of means to the instrument by which the air may be agitated to produce a tremulous note, substantially as described.

R. W. CARPENTER.

Witnesses:

F. A. MARRINER,  
WM. KEMBLE HALL.