

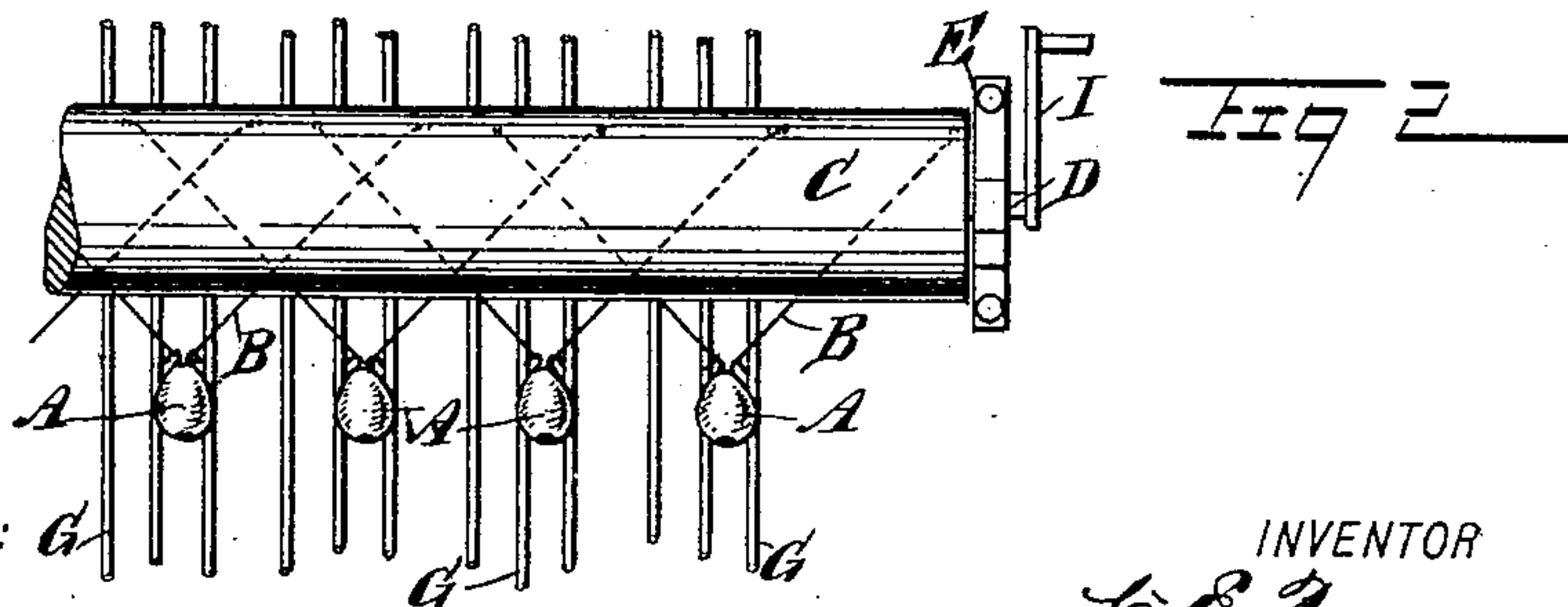
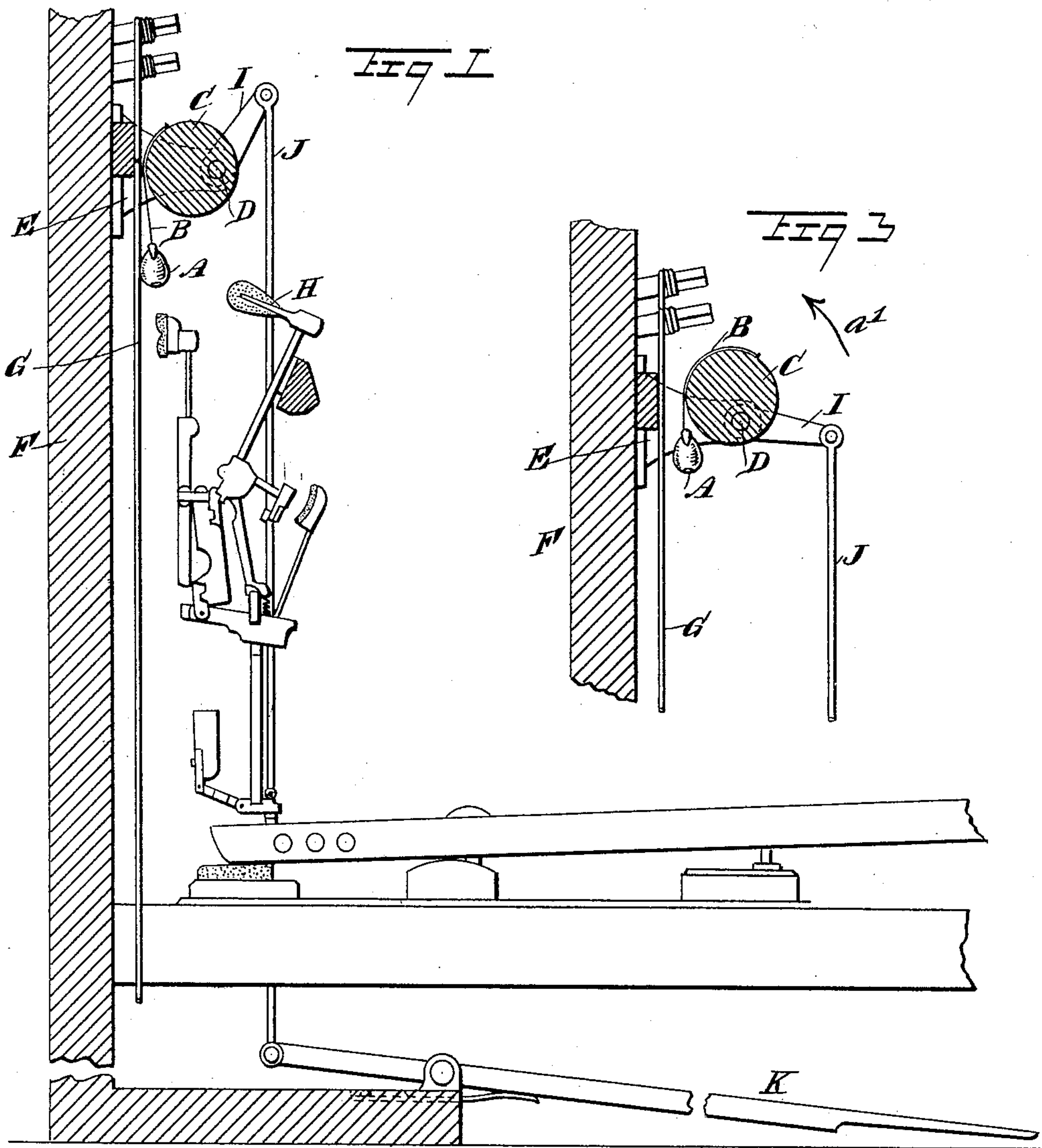
(No Model.)

C. E. PRYOR.

TREMOLO ATTACHMENT FOR STRINGED MUSICAL INSTRUMENTS.

No. 561,436.

Patented June 2, 1896

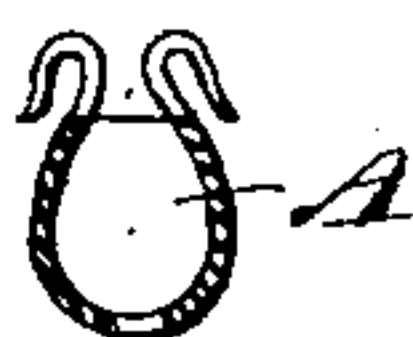


WITNESSES:

H. Walker

Rev. G. Hooper

Fig 4



INVENTOR

C. E. Pryor

BY

Mum & Co  
ATTORNEYS.



# UNITED STATES PATENT OFFICE.

CLARENCE ELWOOD PRYOR, OF NEW YORK, N. Y.

TREMOLO ATTACHMENT FOR STRINGED MUSICAL INSTRUMENTS.

SPECIFICATION forming part of Letters Patent No. 561,436, dated June 2, 1896.

Application filed September 9, 1895. Serial No. 561,918. (No model.)

*To all whom it may concern:*

Be it known that I, CLARENCE ELWOOD PRYOR, of New York city, in the county and State of New York, have invented a new and Improved Tremolo Attachment for Stringed Musical Instruments, of which the following is a full, clear, and exact description.

The object of the invention is to provide a new and improved tremolo autoharp attachment for pianos and other stringed musical instruments which is simple and durable in construction, very effective in operation, entirely independent of the hammers or other parts of the action, and arranged to enable the player to readily throw it out of action and vary the tremolo effect, as desired.

The invention consists of certain parts and details and combinations of the same, as will be fully described hereinafter, and then pointed out in the claim.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a cross-section of part of a piano, showing the devices applied. Fig. 2 is a front elevation of the improvement. Fig. 3 is a cross-section of the same with the parts in a different position, and Fig. 4 is an enlarged sectional side elevation of one of the vibrating bodies.

The improved tremolo attachment is provided with a series of bodies A, preferably in the shape of hollow metallic balls, as shown in Fig. 4, the said bodies being suspended on cords interlaced with each other to form a netting B, attached to the peripheral surface of a drum C, having its shaft D arranged eccentrically to the drum and journaled in suitable bearings E, secured to the piano-frame F. The drum C extends in front of the strings G, so that the bodies A rest or lean against the said strings, as is plainly indicated in Figs. 1 and 2, it being understood that one body is provided for each group of strings, the body resting between two of the strings in the group, as plainly indicated in Fig. 2. The bodies A are in engagement with the strings at a point away from the hammers H, so that the latter strike the strings in the usual manner at a point on the strings different from

that on which the bodies A rest. Now when the strings are sounded by the hammers striking them then the vibrations of the strings cause the bodies A to vibrate, so that the bodies move in and out from the strings, whereby a tremolo effect is produced as long as the string vibrates. It is understood, however, that only those bodies vibrate which have their strings struck by the corresponding hammers.

The eccentric-shaft D of the drum C is provided with an arm I, connected by a link J by one of the pedals K, as is plainly shown in Fig. 1, so that the drum C is turned into the position shown in Fig. 1 whenever the pedal K is pressed and a tremolo effect is desired. Normally, however, the drum C stands in the position shown in Fig. 3—that is, with the netting B wound up on the drum C and with the bodies A away from the strings G. Now it will be seen that by the operator pressing the pedal K the drum C is turned in the direction of the arrow *a'* to cause the netting B to unwind and lower the bodies A, and at the same time throw the drum C inward toward the strings, owing to the eccentric-shaft B, so that the bodies A move in engagement with the two corresponding strings. By pressing the pedal K to the full extent the bodies A are lowered a considerable distance and rest heavily against the strings; but by not pressing the pedal K to the full extent the distance the bodies descend is lessened, and also the force with which the bodies rest on the strings is reduced.

It is understood that by this arrangement the vibrations of the bodies A can be increased or diminished, so that the tremolo effect is varied, it being understood that the vibrations of the bodies A when the latter are in a lowermost position are less in number than when the bodies A are higher up. By suspending the bodies A from interlaced strings, as indicated in Fig. 2, a sidewise motion of the said bodies is not liable to take place, and consequently the bodies are always brought into proper relation with the respective strings to insure a perfect tremolo, varied according to the position of the drum C under the control of the performer.

It is understood that by the arrangement

described the bodies A depend for their vibration only on the strings and not on the action of the hammers H.

It will further be seen that each body A is  
5 in contact with but two of the strings in a group, or the three strings are permitted to vibrate without interruption when struck by the hammer, thus giving the full tone of the piano, as well as the tremolo effect, on the other  
10 two strings at the same time.

The cords of which the netting B is made are preferably silk or linen, to prevent shrinkage of the netting by change of weather and to insure at all times a proper contact between the bodies A and the strings when the  
15 tremolo attachment is in action.

The attachment can be placed either above or below the hammers entirely out of the way, so that it is not unsightly when the instrument is open.  
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Although the device has been shown and described in connection with a piano, it is evident that it may be readily applied to other stringed musical instruments.

Having thus fully described my invention, 25  
I claim as new and desire to secure by Letters Patent—

A tremolo attachment for stringed musical instruments, comprising an eccentrically-mounted drum under the control of the performer, a netting attached to the said drum, and bodies suspended from the said netting, and adapted to move in and out of contact with the piano-strings, substantially as shown and described. 30

CLARENCE ELWOOD PRYOR.

Witnesses:

THEO. G. HOSTER,  
C. SEDGWICK.