(No Model.) 2 Sheets—Sheet 1.

C. K. HEATH.

FOOT POWER APPLICATION.

No. 593,887. Patented Nov. 16, 1897.

Fig. 1.

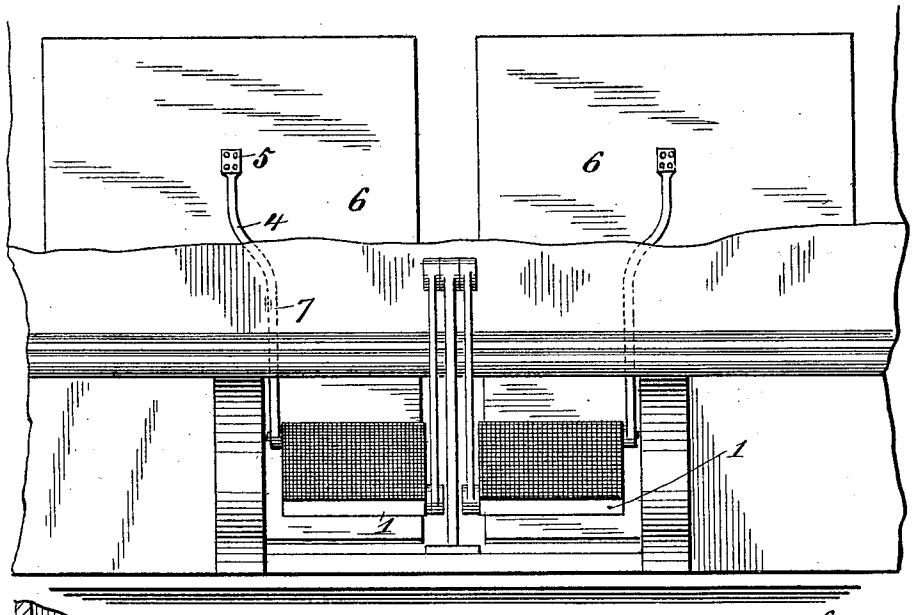


Fig. 2.

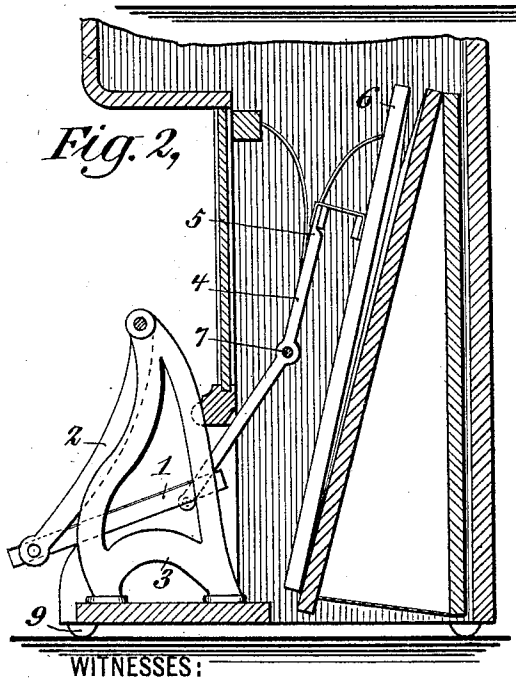
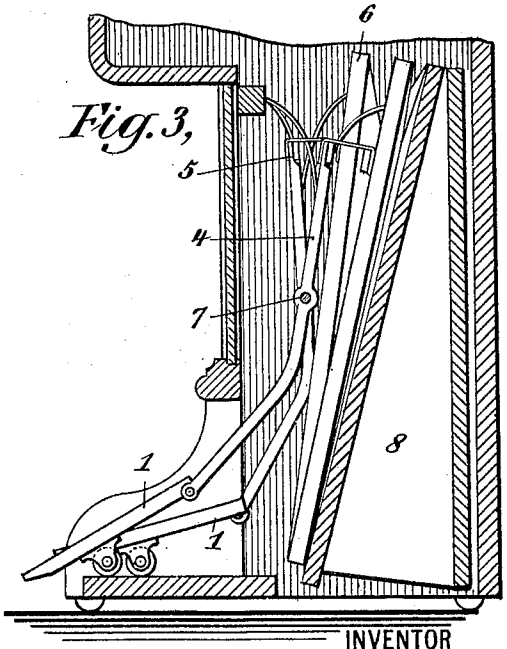


Fig. 3.



WITNESSES:

W. H. Haywood

H. A. Davis

INVENTOR

C. K. Heath,

BY Davis & Co

ATTORNEYS

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

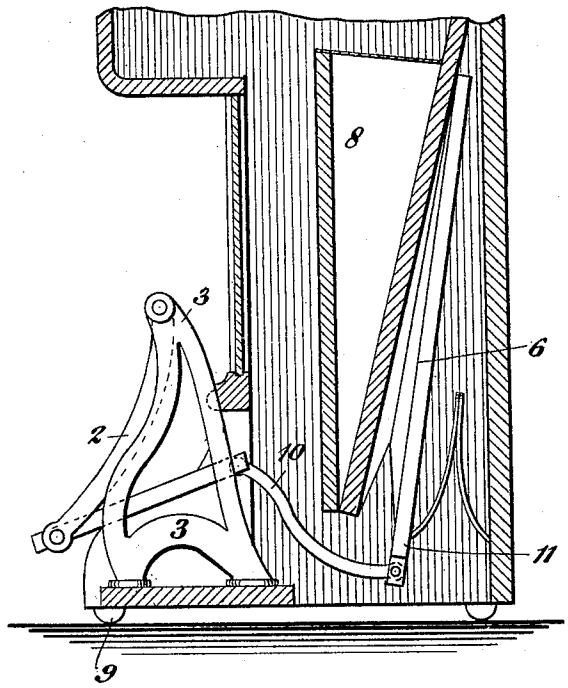
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C. K. HEATH.

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Fig. 4.



WITNESSES:

O. N. Maynard

H. H. Davis

INVENTOR

C. K. Heath.

BY Davis & Co

ATTORNEYS

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

COURTNEY K. HEATH, OF BROOKLYN, NEW YORK.

FOOT-POWER APPLICATION.

SPECIFICATION forming part of Letters Patent No. 593,887, dated November 16, 1897.

Application filed March 18, 1897. Serial No. 628,115. (No model.)

To all whom it may concern:

Be it known that I, COURTNEY K. HEATH, a citizen of the United States, residing at Brooklyn, in the county of Kings and State of New York, have invented a certain new, useful, and valuable Improvement in Foot-Power Appliances, of which the following is a full, clear, and exact description.

This invention relates to foot-power appliances, and particularly to that class of such apparatus employed in musical instruments; and the leading objects of the invention are, first, to provide a foot-power appliance of especially simple, practical, and economical construction; second, to provide a foot-power apparatus which is capable of adaptation to any form of musical instrument; third, to provide foot-power mechanism through which the full power applied by the feet is transferred to the primary movable part of the instrument.

In the numerous forms of foot-power appliances heretofore employed a large percentage of the power applied by the feet has been lost at certain pivotal points because of a defective system of leverage, and including all those forms of foot-pedals which are pivoted or hinged at the outer ends of the foot-boards, at or near the point at which the heels of the operator rest, and depending mostly on a movement of the forward part of each foot, as on movement thus the pivot or hinge under or near the heels receives considerable power over its dead-centers, but the ankle movement required tends to tire the muscles of the operator without rendering it possible to utilize either the full weight or power of the legs, as is possible with this present apparatus, as will be hereinafter more fully described.

In the accompanying drawings, forming a part of this specification, Figure 1 is a front elevation of the improved foot-power appliance, a part of the front board of the musical instrument being broken away in order to show the interiorly-located levers and connections of said appliance. Fig. 2 is a transverse vertical section of the same. Fig. 3 is a transverse vertical section illustrating a modification of said appliance. Fig. 4 is a like view of still another modification.

Like numerals of reference indicate corresponding parts throughout the several views.

Proceeding with a detailed description of the invention, I would first invite attention to a feature of the invention which is common to all the modifications illustrated in the drawings, which feature is to so arrange the foot-boards 1 that they oscillate downwardly and inwardly under the pressure of the feet, thus utilizing the full weight and power of the legs as well as of the feet and obviating any direct hinging or pivoting of the foot-boards 1, which, as shown in Figs. 1, 2, and 4, are separately pivotally supported at their forward ends by swinging arms 2, hanging from the uprights 3, as clearly shown. The rear ends of the foot-boards 1, in the form shown in front elevation in Fig. 1 and in section in Fig. 2, are pivotally connected to the lower ends of the levers 4, each lever 4 having a flexible connection 5 at its upper end with separate exhaust-bellows 6, and said arms 4 being centrally pivoted at points 7, and said exhausters 6 having separate communication with the main bellows 8, the alternate action of said exhausters operating to exhaust the said main bellows 8 in the manner well known to all those skilled in the art.

In the form of the improvement just described it is clearly apparent that the performer or operator after placing his feet upon the two foot-boards 1 can now apply the full power and weight of the legs to said foot-boards, so as to give them a downward and inward motion, thus allowing the most natural and effective movement of the feet and legs from a sitting position of the operator in front of the instrument. It should be particularly noticed that the operator cannot only apply power in the most natural, effective, and tireless way, but that the power thus applied is transferred to the primary movable part of the instrument, which may be a bellows or other form of power-utilizing device, without any part of the power being lost at pivotal points, which occurs in the old-style foot-pedals, as formerly described.

In the modifications shown in Fig. 3 the forward ends of the foot-pedals 1 move upon rollers or casters 9, being otherwise constructed and operated as in the form shown in Figs. 1 and 2.

The modification shown in Fig. 4 varies

from that shown in Figs. 1 and 2 only in that the latter form has the rear ends of its foot-boards 1 pivotally connected to inwardly-extending arms 10, each directly connected to the movable boards 11 of the exhauster 6, which latter, of course, must be arranged, as shown, to meet the changed conditions.

The preferred form of the improved apparatus is that shown by Figs. 1 and 2.

Having now described the invention in its preferred and modified forms, the novel features thereof will be pointed out in the claims concluding this specification, which are made sufficiently broad to cover any modification which may be made by others with a view of avoiding the spirit of this invention as defined by the directly-following claims:

1. In a foot-power device for wind or other instruments, the combination with the foot-board, of a lever connection between one end of said foot-board and a movable part of the instrument, and a movable support for the opposite end of the foot-board whereby said board is allowed an oscillating movement, substantially as described.

2. In a foot-power device for wind or other instruments, the combination with the foot board or boards, of a pivoted lever connected at one end to the foot-board and at its other end to a movable part of the instrument, and a movable support for the opposite end of the foot-board, substantially as described.

3. In a foot-power device for wind or other instruments, the combination with one or more foot-boards, of a pivoted lever connected at one end to the foot-board and at its opposite end to a movable part of the instrument, a link for pivotally supporting the opposite end of the board, and a support for the link, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

COURTNEY K. HEATH.

Witnesses:

OWEN WARD,

C. R. COMÉS.