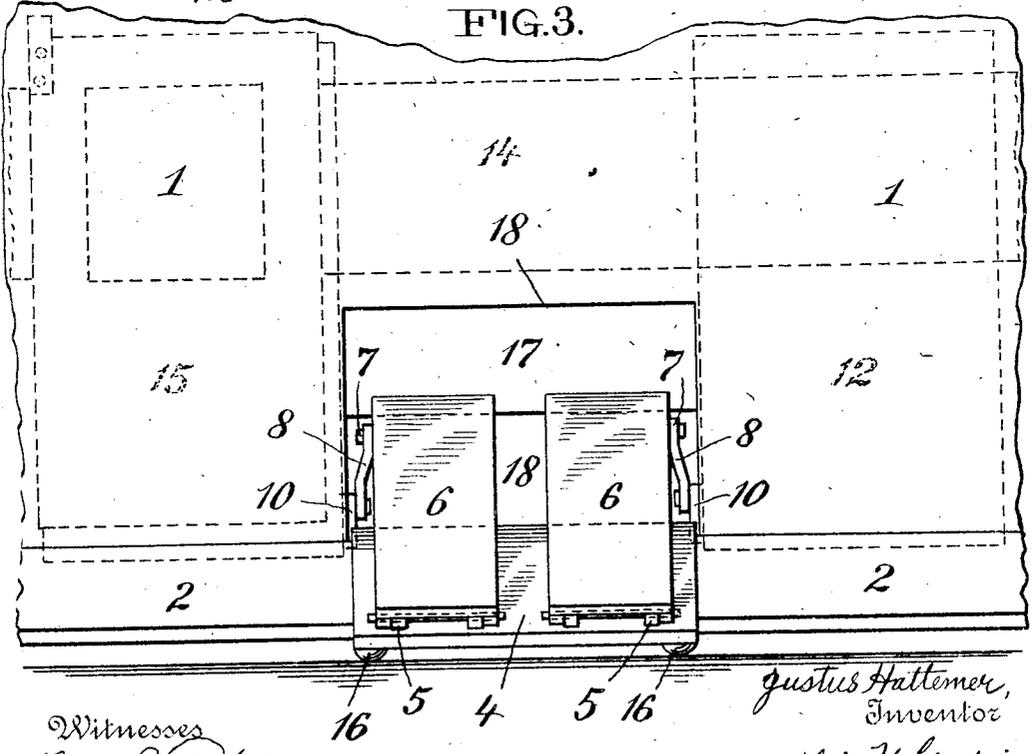
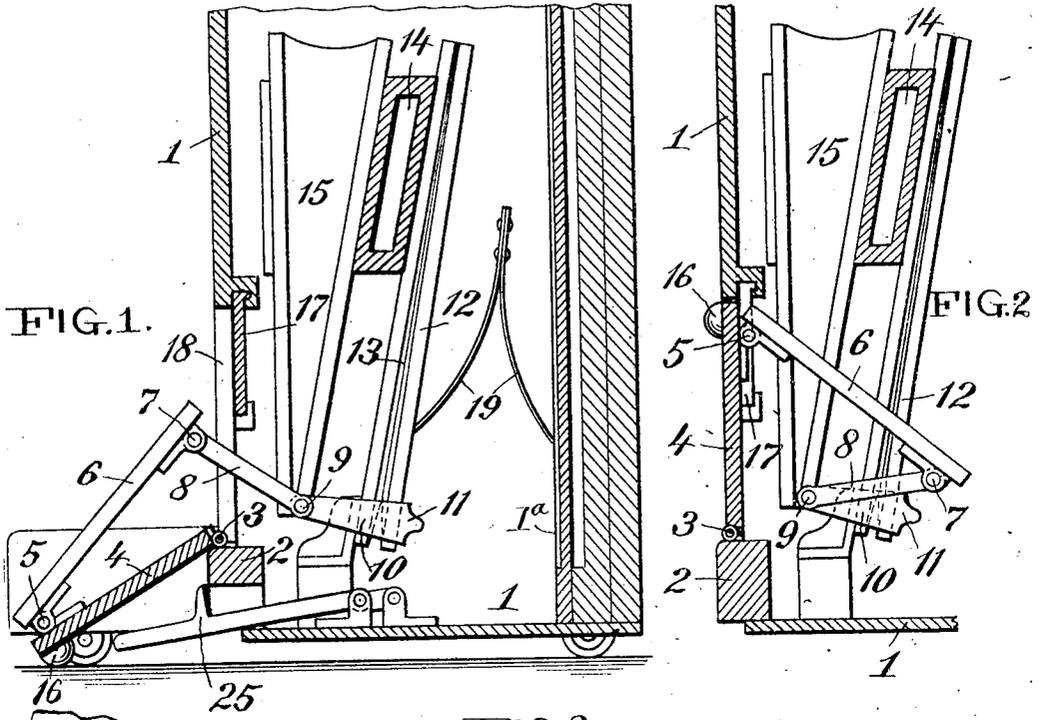


J. HATTEMER.
FOLDING PEDAL.

APPLICATION FILED AUG. 20, 1904.

2 SHEETS—SHEET 1.



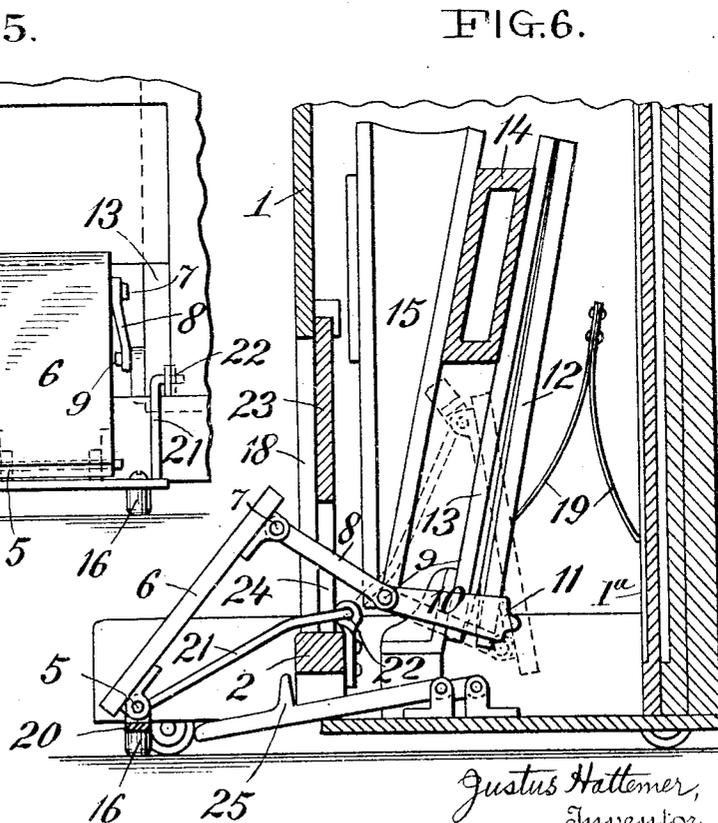
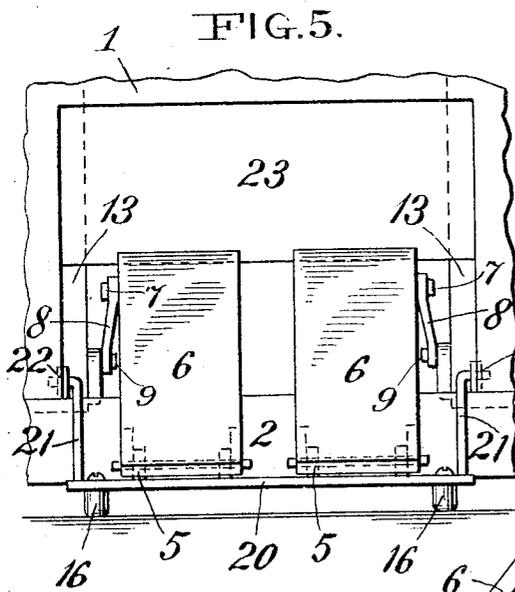
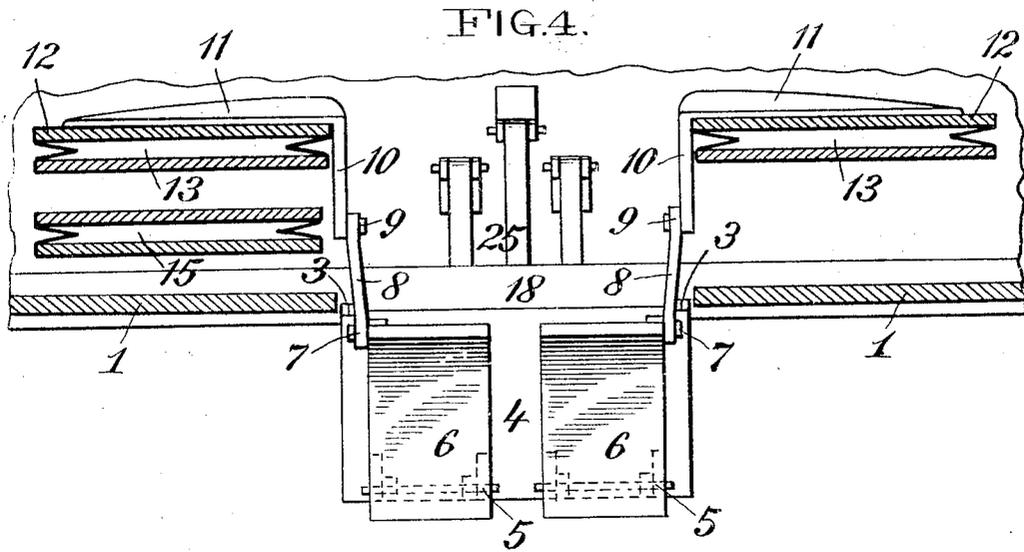
Witnesses
Donn Mitchell
E. W. Allen

Justus Hattemer,
 Inventor
 By his Attorney *Alvin K. Goodwin,*

J. HATTEMER.
FOLDING PEDAL.

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2 SHEETS—SHEET 2.



Witnesses
Anna Twitchell
E. W. Allen

Justus Hattemer,
 Inventor
 By his Attorney *Alvin K. Goodwin*

UNITED STATES PATENT OFFICE.

JUSTUS HATTEMER, OF NEW YORK, N. Y., ASSIGNOR TO HARDMAN PECK & COMPANY, OF NEW YORK, N. Y., A CORPORATION.

FOLDING PEDAL.

No. 802,508.

Specification of Letters Patent.

Patented Oct. 24, 1905.

Application filed August 20, 1904. Serial No. 221,504.

To all whom it may concern:

Be it known that I, JUSTUS HATTEMER, a citizen of the United States of America, residing at the city of New York, State of New York, have invented certain new and useful Improvements in Folding Pedals, of which the following is a specification.

This invention relates to pedals for operating the wind-inducing bellows of self-playing pianos or of piano-players or of reed or pipe organs. In prior well-known pedals of this character it is necessary to first press down the toe ends of the outfolded pedals against considerable resistance offered by the spring-pressed movable walls of the bellows before the pedals and their supports can be folded upward against or within a piano or a piano-player case. Because of the above-named bellows resistance and also of the generally awkward nature of this necessary initial toe-adjustment of the pedals it is difficult, especially for a child, to fold the prior pedal structure within a piano or other musical-instrument case.

It is the object of this invention to evolve a folding-pedal structure of simple and inexpensive construction and efficient operation and which may be folded within a musical-instrument case easily and quickly by any one and without requiring the above-mentioned awkward initial movement of the toe ends of the pedals.

The invention will first be described and then will be particularly defined in claims hereinafter set forth.

Reference is made to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a vertical sectional elevation of the lower portion of a self-playing piano with the improved pedals outfolded for use and hinged to a panel which when closed forms part of the front of the instrument-case, and Fig. 2 is a vertical sectional view showing the pedals folded within the case. Fig. 3 is a front elevation showing the pedals outfolded for use, and Fig. 4 is a sectional plan view of the case-front and the wind-inducing apparatus with the pedals in outfolded adjustment. Fig. 5 is a front elevation of a modification, showing the outfolded pedals hinged to a frame which passes into the case when the

pedals are folded; and Fig. 6 is a vertical sectional view showing by full lines these modified pedals outfolded for use and indicating by dotted lines their infolded adjustment.

Referring first to Figs. 1 to 4 of the drawings, the numeral 1 indicates the lower portion of a piano-case having a front pedal-rail 2, to which is hinged at 3 a plate-support 4, to the outer part and inner face of which are hinged at 5 the heel ends of two pedals 6. The toe ends of these pedals are pivoted at 7 to one end of links 8, the other ends of which are pivoted at 9 to the forwardly-projecting ends 10 of plates or castings 11, which are secured to the inner movable walls 12 of the main bellows 13. The bellows are fastened by their fixed front or outer walls to the main wind-chest 14, to the front of which the reservoir 15 is connected. It will be specially noticed that the links 8 lie and move in planes between the planes of the outer edges of the pedals 6 and the inner edges of the bellows 13. The plates 11 have a sufficiently-long horizontal bearing against the movable bellows walls 12 to prevent injurious wrenching of the hinge connections of these walls by the operation of the bellows by or from the pedals. Floor pads or buffers 16, of rubber or other material, are fastened at the outer face of the pedal plate-support 4. A laterally-sliding panel 17 may or may not be used at the upper part of the case-front opening 18, through which the pedals pass during their unfolding and infolding movements.

Presuming that the pedals 6 are folded within the piano-case 1, as shown in Fig. 2 of the drawings, to unfold them for use it only is necessary to release any suitable latch or catch (not shown) which may be employed at the plate 4 to hold it and the pedals infolded, and then swing said plate or support 4 downward upon its hinges 3 until the buffers 16 come to rest upon the floor, and the pedals then have the operative position shown in Figs. 1, 3, and 4 of the drawings. The panel 17, if used, then is slid along into the upper part of the case-front opening 18 to conceal lower portions of the bellows 12 and reservoir 15 from view and without interfering with movement of the pedals for operating the bellows. The opening 18 being comparatively small, the sliding cover or panel 17

may be omitted. Springs 19 serve to collapse the bellows 12, the said springs also bearing against a stationary part of the casing, such as the string-frame 1^a, located at the rear of the casing.

To infold the pedals after use, the panel 17 will be slid sidewise clear of the case-opening 18, and the pedal-support 4 then will be swung upward on its hinges 3, and as the links 8 swing over rearward on the pivots 9 the pedals 6 turn heel ends uppermost and pass through the case-front opening 18 and under the main wind-chest 14 and between the opposing edges of the two bellows 13 13 and along the inner edge of the reservoir 15, which is or may be nearly in line with the inner edge of the left-hand bellows 13. When the pedals 6 are fully infolded, their supporting-plate or panel 4 stands about flush with the front panel of the piano-case and forms a part thereof, as shown in Fig. 2 of the drawings. The parts would remain thus adjusted by the inwardly overhanging weight of the pedals 6 and links 8 without use of a latch or catch device at the panel 4; but the use of such latch is preferred in practice as it holds the pedal-support 4 positively closed and avoids rattling of parts during heavy manual playing of the piano or during transportation of the instrument.

A brief description of the modified pedals shown in Figs. 5 and 6 of the drawings will suffice. Instead of hinging the pedals 6, as above described, to a plate or support 4, forming part of the piano-case front when the pedals are folded, the pedals are hinged at 5 to the front bar 20 of a U-shaped metal frame whose opposite side bars 21 21 are hinged at 22 to lugs fastened to the piano pedal-rail 2. The frame-bar 20 carries the floor-buffers 16. In this construction the entire frame 20 21 21, with the pedals 6 6 and their bellows-coupling links 8, fold within the piano-case. Upper and lower sliding panels 23 24 are provided at the case-pedal opening 18, and both of these panels will be slid to one side while the pedals are being folded and unfolded. The upper panel 23 will be adjusted over the outfolded pedals to as far as possible conceal the wind-inducing devices during operation of the pedals, and both panels 23 24 will be slid along to entirely close the case-pedal opening 18, when the pedals are folded within the case, as indicated by the dotted lines in Fig. 6 of the drawings. These pedals hinged to the frame 20 21 are folded inward or are unfolded outward by a single simple swinging movement of the frame on its hinges 22 and without moving the bellows-boards 12, and consequently without meeting resistance from the bellows-spring 19. The same advantages of simplicity and ease of adjustment thus prevail with both styles of pedal-mountings shown in the drawings, and either arrangement

of pedals may be used without in the least interfering with the ordinary tone-modulating pedals 25, fitted at the base of the instrument.

It will be observed that in folding the pedals into the case or swinging them out for use the two pivot-axes (3 and 9 in Figs. 1 to 4 and 22 and 9 in Figs. 5 and 6) remain absolutely stationary and at the same distance from each other during the entire movement of the pedals. Thus the projecting ends of the plates 11 and the movable walls 12 of the bellows remain stationary during the inward or outward folding movement of the pedals, so that the bellows 13 or the springs 19 do not oppose any resistance to such movement of the pedals. By locating the pivots 9 on the forwardly-projecting arms 10 I bring the path of the pedal forward so far that even in its rearmost or inner position it does not come beyond the rearmost position of the movable wall 12. I am thus enabled to economize space by placing the bellows quite close to the rear portion of the case without any danger of the pedals colliding with the back of the case in its folding movement. The length of the link 8 is about equal to that of the arm 10, so that in the folded position (see Fig. 2, also dotted lines in Fig. 6) the pedal projects but slightly beyond the movable wall 12 of the bellows. Preferably the front link (4 or 21) or "heel-link," as it may be termed, is longer than the rear link or toe-link 8. The pedal can be folded into the case by simply putting the toe under the hinge 5 and throwing the pedal upward and inward. As soon as the center of gravity passes beyond a point directly above the pivot 9 the parts will drop by gravity to the position shown in Fig. 2 and also indicated by dotted lines in Fig. 6.

It will be observed that the pedal is inverted or turned upside down in its inner or rear position, this being due to the location of the four points determined by the pivotal connections at the ends of the links. The result is obtained more conveniently when the front link is the longer one, and especially when the distance between the two supporting-points (3 and 9 in Figs. 1 to 4 and 22 and 9 in Figs. 5 and 6) is smaller than the distance between the two points (5 and 7) where the pedal is pivotally connected with the links.

I claim as my invention—

1. The combination of the frame, the bellows, the movable portion of which has a forwardly-projecting arm, the pedal arranged to move in a path located laterally of the path of the movable member of the bellows, a link one end of which is pivotally connected with the heel portion of the pedal while the other end is fulcrumed about a stationary axis, and another link, about equal in length to said arm on the bellows, which second link

has one end pivotally connected with the toe end of the pedal, and the other with the forward portion of said arm.

2. The combination of the frame, the bellows, the pedal arranged to move in a path located laterally of the path of the movable member of the bellows, a link, one end of which is pivotally connected with the heel portion of the pedal while the other end is fulcrumed about a stationary axis, and another link, shorter than the one first named, having one end pivotally connected with the toe end of the pedal and the other with the movable end of the bellows.

3. The combination of the frame, the bellows, the pedal arranged to move in a path located laterally of the path of the movable member of the bellows, a link, one end of which is pivotally connected with the toe end of the pedal, while the other end of the link is pivoted to the movable member of the bellows at a point so far forward that said link and the pedal, during their inward folding movement, will remain forward of the rear-most position taken by the movable member of the bellows, and another link pivotally connected with the heel end of the pedal and with the frame.

4. The combination of the frame, the bellows, the pedal arranged to move in a path located laterally of the path of the movable member of the bellows, and two links pivotally connected with the pedal and also pivotally supported, one at a stationary point and the other on the movable bellows member, the pivotal supporting-points remaining stationary and at an invariable distance from each other as the pedal and links swing on said supporting-points for infolding or out-

folding, said distance being shorter than the distance between the pivotal connections of the pedal with the links.

5. The combination of the frame, the bellows, the pedal arranged to move in a path located laterally of the path of the movable bellows member, a rear link fulcrumed on said movable bellows member and reversible to extend either forward or rearward from its fulcrum, said link being also pivotally connected with the toe portion of the pedal, and a front link having one end fulcrumed at a stationary point and the other pivoted to the heel portion of the pedal, the lengths of the links and their points of connection being so determined that in the rear or infolded position of the pedal the heel portion thereof will be elevated above its toe portion.

6. The combination of the frame, the bellows, the pedal arranged to move in a path located laterally of the path of the movable member of the bellows, and two links pivotally connected with the pedal and also pivotally supported, one at a stationary point and the other on the movable bellows member, the pivotal supporting-points remaining stationary and at an invariable distance from each other, as the pedal and links swing on said supporting-points for infolding or outfolding, the lengths of the links and their points of connection being so determined that the pedal will be toe end uppermost in the forward or outer position and heel end uppermost in the rear or inner position.

JUSTUS HATTEMER.

Witnesses:

ERNEST BELMONT,
JOSEPH C. FRANKÉ.