E. T. TURNEY.

TREADLE FOR PIANO PLAYING ATTACHMENTS.

APPLICATION FILED OCT. 22, 1908.

998,136. **Patented July 18, 1911.**

2 SHEETS—SHEET 1.

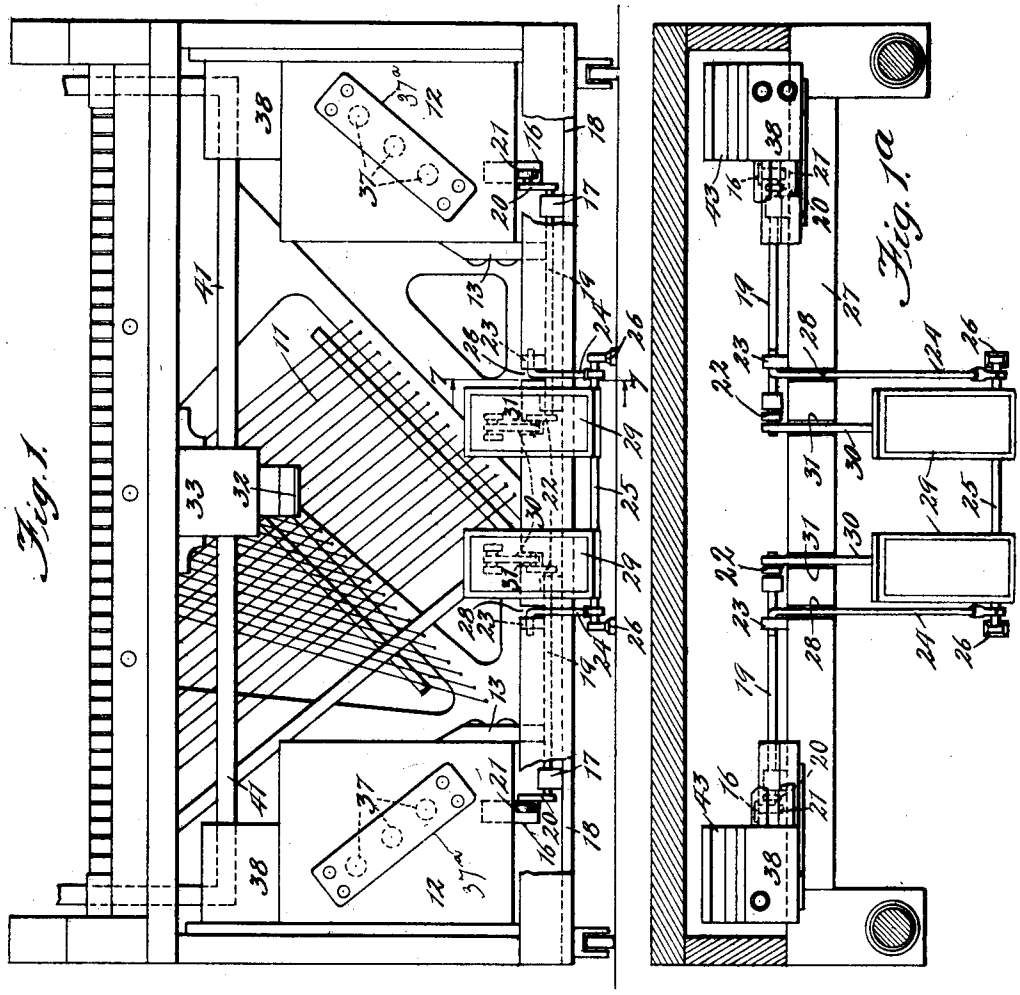

Fig. 1.

Fig. 1a.

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2 SHEETS—SHEET 2.

Fig. 2.

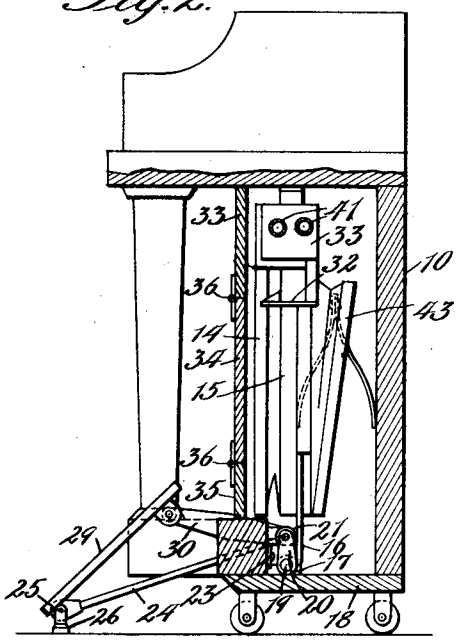


Fig. 3.

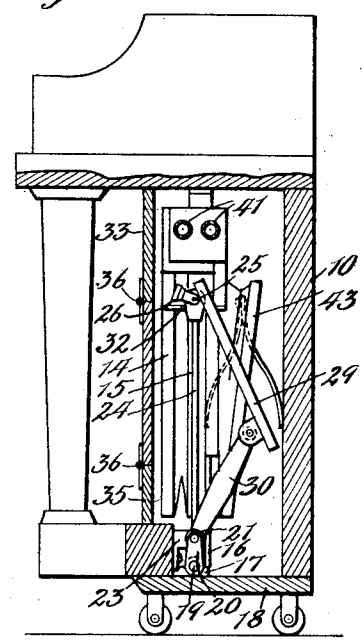


Fig. 4.

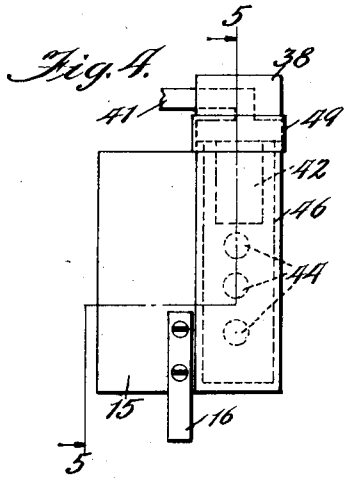


Fig. 5.

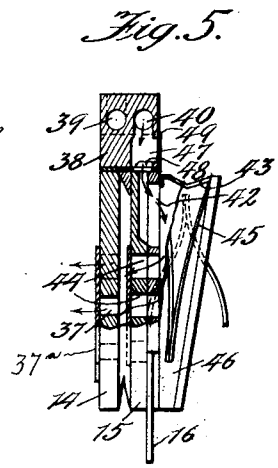


Fig. 7.

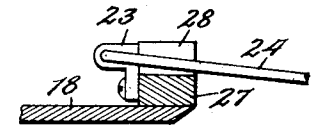
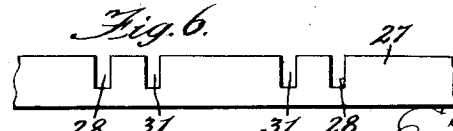


Fig. 6.



Witnesses:

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UNITED STATES PATENT OFFICE.

EUGENE T. TURNEY, OF ROCK ISLAND, ILLINOIS, ASSIGNOR TO ARTISTA PIANO PLAYER COMPANY, OF MILAN, ILLINOIS, A CORPORATION OF ILLINOIS.

TREADLE FOR PIANO-PLAYING ATTACHMENTS.

998,136. Specification of Letters Patent. Patented July 18, 1911.

Application filed October 22, 1908. Serial No. 459,099.

To all whom it may concern:

Be it known that I, EUGENE T. TURNEY, a citizen of the United States, residing at Rock Island, in the county of Rock Island and State of Illinois, have invented certain new and useful Improvements in Treadles for Piano-Playing Attachments, of which the following is a specification.

This invention relates to improvements in treadles for piano playing attachments and the primary object of the invention is to provide an improved attachment of this character which is adapted to be turned or swung into and out of the piano case without folding or changing the position of the treadles with respect to the connected operating mechanism.

A further object is to provide an improved pumper bellows and improved operative connections between the treadles and the bellows whereby the bellows may be located to the side of and at points remote from the treadles to provide sufficient space within the casing of the instrument into which said space the treadles are adapted to be swung or turned without necessitating the folding of the treadles themselves with respect to the treadle supporting mechanism.

A further object is to provide improved means whereby the treadles, links and support will always maintain the same relative position with respect to each other when the treadles are in either their operative or inoperative position or when being moved from one position to the other.

A further object is to provide improved mechanism of this character which will be simple, durable, cheap and compact in construction and effective and efficient in operation.

To the attainment of these ends and the accomplishment of other new and useful objects, which will appear, the invention consists in the features of novelty in the construction, combination and arrangement of the several parts hereinafter more fully described and claimed and shown in the accompanying drawing, illustrating an embodiment of the invention, and in which—

Figure 1 is a detail front elevation of the base of a musical instrument having a treadle attachment applied thereto constructed in accordance with the principles of this invention. Fig. 1ª is a detail top plan view partly in section, showing the treadles projecting out of the casing and in position for use. Fig. 2 is a side elevation of Fig. 1 with the end of the casing removed and showing the treadles in an operative position. Fig. 3 is a view similar to Fig. 2 showing the treadles folded within the casing. Fig. 4 is a rear elevation of one of the pumper bellows. Fig. 5 is a sectional view on line 5—5 of Fig. 4. Fig. 6 is a detail elevation of the plate or toe-rail for holding the treadle supports against lateral displacement. Fig. 7 is a detail sectional view on line 7—7 of Fig. 1.

Referring more particularly to the drawing and in the present exemplification of the invention, the numeral 10 designates generally a portion of an instrument to which this improved attachment is applied and the casing is provided with an open front adjacent the bottom. Within the casing and adjacent each side thereof and remote from the extremity 11 of the strings, which extend into the base and so as not to form an obstruction in front of the strings, are located two pumper or suction creating devices in the form of pneumatics or bellows and designated generally by the reference numeral 12 in Fig. 1. Each of these bellows 12 is secured in position in any suitable manner, preferably by means of a support 13 to which one of the members of the bellows is secured, preferably the front member 14 and the bellows 12 are arranged so that the movable member 15 thereof will be disposed toward the rear of the instrument and in a position to swing about a horizontal axis.

Secured to the movable member 15 of the bellows and extending beyond the edge thereof is a projection 16, preferably in the form of a plate, and journaled in suitable bearings 17 secured to the base 18 of the casing are shafts 19, one of which is provided for each of the bellows or pumpers 12 and these shafts 19 are spaced longitudinally from each other and secured to one extremity of each of the shafts is a crank arm 20 journaled to which is a suitable anti-friction roller 21. This crank 20 is of such a length that the anti-friction roller 21 thereon will engage the plate or extension 16, to move the movable member 15 away

from the stationary member 14 when the shafts are rocked in one direction. Secured to the other extremity of each of the shafts is a similar crank 22, which is preferably of the same length as the crank arm 20 and is in line therewith.

Secured within the casing and adjacent the base 18 and at points adjacent the center of the casing are bearings 23 (see Fig. 7) and pivotally supported in each of these bearings is one extremity of a side arm 24, which may be of any desired or suitable length and are spaced from each other. The outer extremities of these arms 24 are connected by a cross bar 25 which is provided with suitable feet 26 which are adapted to rest upon the floor when the arms 24 are swung out of the casing. Toe-rail or plate 27 is provided with apertures 28 opening through the top edge thereof, one adjacent each of the bearings 23 and through which the arms 24 are adapted to project.

Suitable treadles 29 are pivotally supported by one extremity to the cross bar 25 and these treadles are spaced laterally from each other, each of them being disposed adjacent one of the side arms 24. Pivotally connected by one end to the other extremity of the treadles 29 are links 30 and the free extremity of these links are pivotally connected to the cranks 22 on the shafts 19. The links 30 are of such a length that when the feet 26 of a connecting bar 25 rest upon the floor, the treadles 29 will be held in an inclined position and in position for use.

With this improved construction and by placing the pivotal points of the side arms and the points where the links are pivoted to the crank 22 in direct lines, the pedals, links and side arms will be maintained in the same relative position in an operative position as in an inoperative position so that when the treadles are swung into or out of the casing the necessity for folding the treadles with respect to the connecting links and supporting arms will be obviated and by placing the pumper bellows adjacent the extremities of the casing and to the side of the treadles, a sufficient space will be provided into which the treadles may be swung.

The toe-rail or plate 27 is provided with notches 31 opening through the top thereof, through which the links 30 are adapted to project.

Any suitable means may be provided for holding the treadles within the casing, such as a catch 32, which is supported from any suitable support within the casing, preferably the distributing box 33 and this catch 32 is located in such a position that when the treadles are swung from the position shown in Fig. 2 to that shown in Fig. 3, the catch will engage the connecting bar 25 between the treadles.

A closure is preferably provided for the front of the base of the casing which comprises a plurality of sections 33, 34 and 35, which sections are pivotally connected by means of suitable hinges 36. These sections are adapted to be turned upon their points of pivotal connection when it is desired to lower the treadles from the position shown in Fig. 3 to that shown in Fig. 2 and the lowermost section 35 is adapted to remain folded upon the adjacent section 34 until the section 34 has passed beyond the extremity of the treadles after which the section 35 may be folded down into position to completely close the base of the instrument.

Each of the pumpers or bellows comprises the fixed member 14 and the movable member 15. One of the members, preferably the member 14, is provided with openings 37 which are covered by a valve 37ª and these openings communicate with the outside air and through which the air in the bellows is discharged when the bellows is collapsed. Supported by each of the pumpers, preferably the fixed member 14 thereof, is a connection block 38 to form a fixed support or connection and is provided with a passage 39 therein, to one end of which passage one of the tubes leading from the air ducts or channels is connected, and this passage communicates with the distributing valve box 33. The block or member 38 is also provided with a passage 40 which has communication with the distributing valve box through the medium of a connecting tube or pipe 41. The passage 40 has communication with an aperture 42 in one of the walls of a supplemental bellows or equalizer 43. This equalizer or supplemental bellows is preferably of a size somewhat smaller than the pumper bellows and is preferably secured to the movable member 15 to one side of the center thereof, and also has communication with the pumper bellows through a series of apertures or openings 44 in the member 15 thereof and through which apertures the air which passes into the supplemental bellows or equalizer 43 is discharged when the equalizer is collapsed. The equalizer 43 is preferably normally held expanded by means of a suitable elastic member, such as a spring 45, which is arranged between the movable member 46 thereof and the movable member 15 of the pumper bellows and the said equalizer is preferably supported with respect to the pumper bellows in such a position that the larger end of the equalizer will be opposed to the larger end of the pumper bellows, as shown more clearly in Fig. 5 of the drawings. The member 38 is provided with an aperture 47 which preferably opens through one side thereof and communicates with the passage 40. A suitable frame 48 is secured to the member 15 of the pumper bellows and serves as a support to which one

side of the flexible member 49 which forms a closure for the aperture 47 may be secured.

With this construction it will be apparent that the blocks or members 38 through which the passages 39, 40 pass will render it possible to pass the air through the equalizer and into the pumper bellows and the equalizer may be arranged or supported by the back of the pumper bellows to operate entirely within the piano case, and by arranging the equalizer on the back of the pumper bellows there will be provided a greater space for the treadles to be compactly folded or swung into the piano case between the pumper bellows.

In use when the pumpers are expanded by forcing the movable member thereof away from the fixed member 14 to create a suction to draw the air into the pumpers, the equalizer will be collapsed, thereby causing the pumper and equalizer to occupy substantially the same amount of space during the entire operation of the pumper, that is, during the operation of the pumper, when one of the bellows leaves the fixed member at the bottom, the other approaches the fixed member at the top.

In order that the invention might be fully understood the details of the foregoing embodiment thereof have been thus specifically described but

What I claim as new is—

1. In combination, an arm pivoted at one end to a fixed support, a treadle pivoted at its forward end to the arm, a rock shaft, a link pivotally connected at one end with the shaft and by the other end to the treadle, a bellows, means operatively related to the shaft for operating the bellows, the pivot of the said support being disposed in a direct line with the point of pivotal connection of the link with the shaft, so that the treadle, link and support will always maintain the same relative position with respect to each other during the folding and unfolding movement.

2. In combination, a casing, an arm pivoted at one end to a fixed support within the casing, a treadle pivoted at its forward end to the arm and foldable with the arm into the casing, a rock shaft, a bellows, means operatively related to the shaft for operating the bellows, and an operative connection between the treadle and the shaft, the said connection including means whereby the treadle, links and support will always maintain the same relative positions with respect to each other during the folding and unfolding movement.

3. In combination, a casing, an arm pivoted at one end to a fixed support within the casing, a treadle pivoted at its forward end to the arm and foldable with the arm into the casing, a rock shaft, a bellows, means operatively related to the shaft for operating the bellows, an operative connection between the treadle and the shaft, the said connection including means whereby the treadle, links and support will always maintain the same relative positions with respect to each other during the folding and unfolding movement, and means for holding the treadle within the casing.

4. In combination, a casing, an arm pivoted at one end to a fixed support within the casing, a treadle pivoted at its forward end to the arm and foldable with the arm into the casing through an opening therein, a rock shaft, a bellows, means operatively related to the shaft for operating the bellows, an operative connection between the treadle and the shaft, the said connection including means whereby the treadle, link and support will always maintain the same relative positions with respect to each other during the folding and unfolding movement, means for holding the treadle within the casing, and a sectional closure for the said opening.

5. The combination of a casing, supporting arms pivoted at one end to fixed supports within the casing, a member connecting the free ends of the arms, treadles pivoted by one end to the connecting member and foldable with the arms into the casing, rock shafts spaced longitudinally from each other, bellows, means operatively related to the shafts and the respective bellows, for operating the latter, a crank on each of the adjacent ends of the shafts, and links connecting the inner ends of the treadles with the respective cranks, the points of pivotal connections of the links with the respective cranks being in line with the points of pivotal support of the supporting arms.

6. The combination of a casing, supporting arms pivoted at one end to fixed supports within the casing, a member connecting the free ends of the arms, treadles pivoted by one end to the connecting member and foldable with the arms into the casing, rock shafts spaced longitudinally from each other, bellows, means operatively related to the shafts and the respective bellows for operating the latter, a crank on the adjacent ends of the shafts, links connecting the inner ends of the treadles with the respective cranks, the points of pivotal connections of the links with the respective cranks being in line with the points of pivotal support of the supporting arms, and a catch within the casing adapted to engage the said connecting member between the treadles for holding the latter within the casing.

7. The combination of a casing, supporting arms pivoted at one end to fixed supports within the casing, a member connecting the free ends of the arms, treadles pivoted by one end to the connecting member, bellows within the casing arranged on each

side of the treadles, rock shafts, means operatively related to the shafts and the respective bellows for operating the latter, and means including links operatively connecting the treadles to the respective shafts, said treadles, supporting arms and links being foldable into the casing and into the space between the bellows.

8. The combination of a casing, supporting arms pivoted at one end to fixed supports within the casing, a member connecting the free ends of the arms, treadles pivoted by one end to the connecting member, bellows within the casing, arranged on each side of and beyond the treadles, rock shafts, means operatively connecting the shafts and the respective bellows, for operating the latter, and means including links operatively connecting the treadles to the respective shafts, whereby said treadles, supports and links may be folded into the casing and into space between the bellows without folding the treadles with respect to their support and the said links.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, on this 6th day of October A. D. 1908.

EUGENE T. TURNEY.

Witnesses:

C. A. LITTT,

W. E. THOMPSON.