

Oct. 18, 1949.

E. DEZSO

2,484,936

STRIKER OPERATOR FOR MUSICAL INSTRUMENTS

Filed Nov. 21, 1947

2 Sheets-Sheet 1

FIG. 1

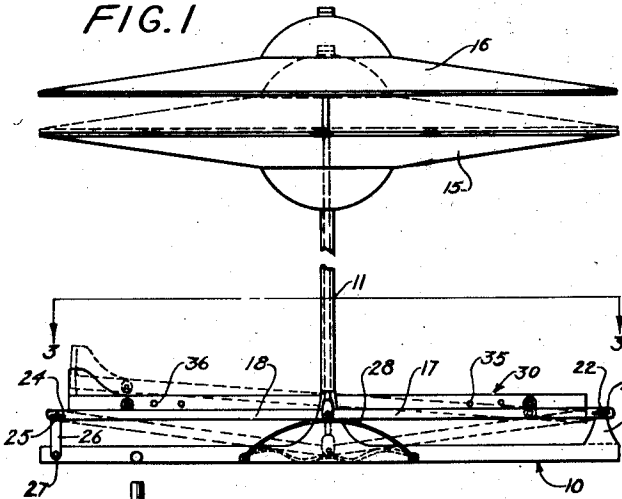


FIG. 2

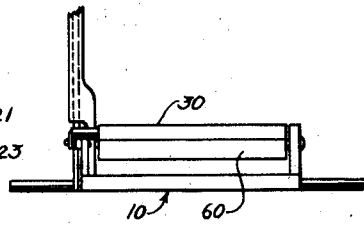


FIG. 3

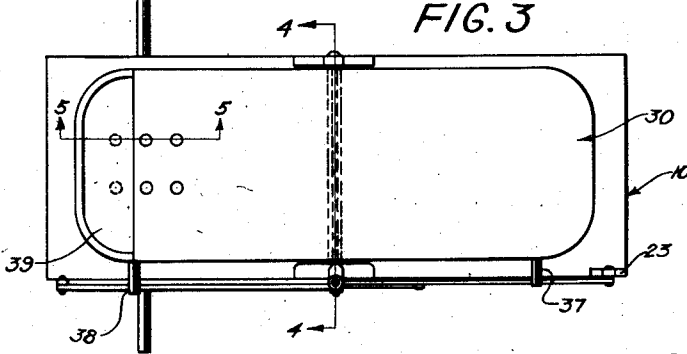


FIG. 5

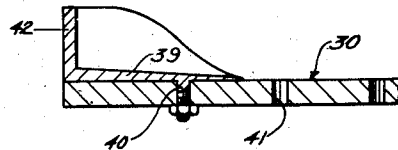
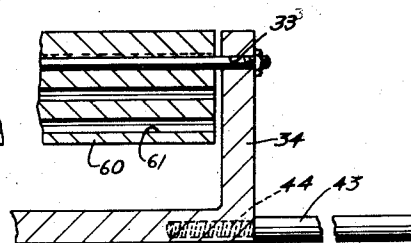
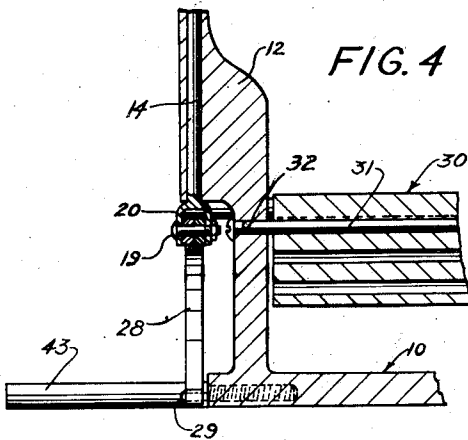


FIG. 4



INVENTOR.
EMERY DEZSO

BY

McMorrow, Berman & Davidson
Attorneys

Oct. 18, 1949.

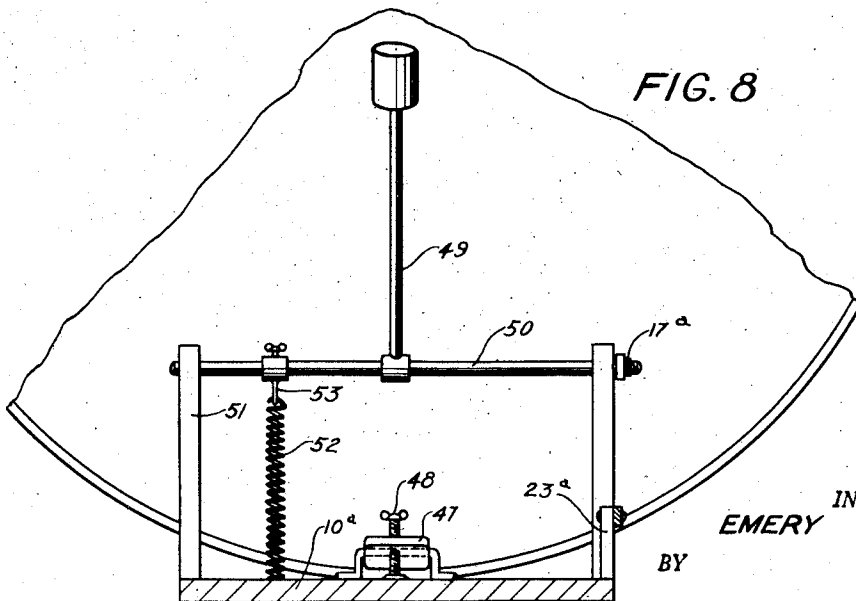
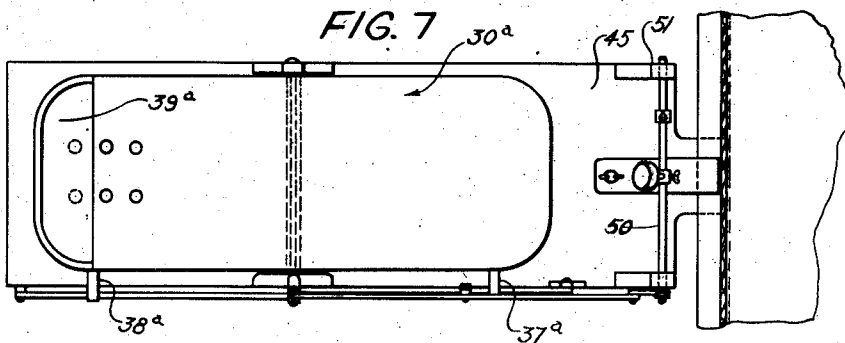
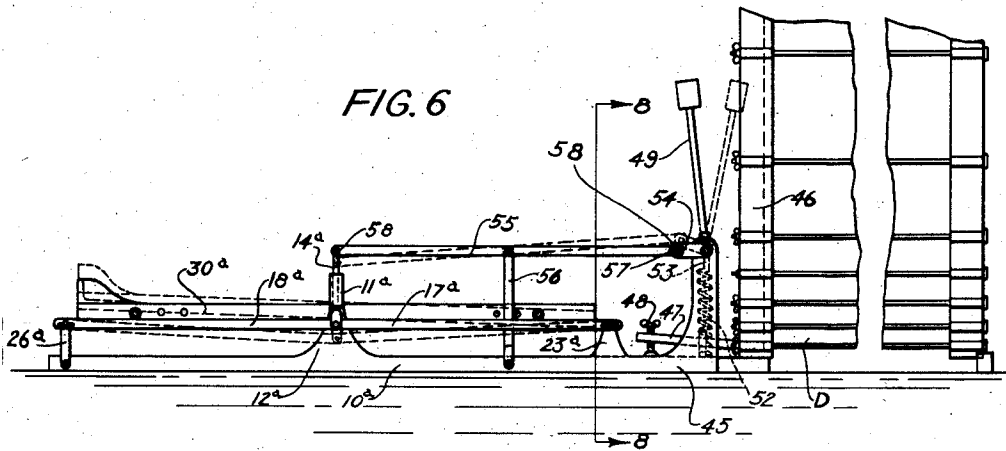
E. DEZSO

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INVENTOR.
EMERY DEZSO

BY

McMorrow, Berman & Davidson
Attorneys

UNITED STATES PATENT OFFICE

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STRIKER OPERATOR FOR MUSICAL INSTRUMENTS

Emery Dezso, Mishawaka, Ind.

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7 Claims. (Cl. 84-422)

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This invention relates to musical instruments, and more particularly to a striker operator for percussion instruments.

An object of this invention is to provide an improved operator for a striker or beater such as used with drums or the like so that the striker or beater may be operated by both the heel and toe action of the player.

Another object of this invention is to provide an improved operator of this kind which can readily be adapted to operating cymbals or other instruments of like character.

A further object of this invention is to provide an operator of this kind which can be readily connected with a drum or other musical instrument.

A further object of this invention is to provide an operator of this kind which is simple in construction so that it can be manufactured at relatively small cost and will not get out of order under hard usage.

With the above and other objects in view, my invention consists in the arrangement, combination and details of construction disclosed in the drawings and specification, and then more particularly pointed out in the appended claims.

Figure 1 is a detailed side elevation of an operator constructed according to an embodiment of this invention connected with a pair of cymbals,

Figure 2 is a fragmentary front elevation of the device,

Figure 3 is a sectional view taken substantially on the line 3-3 of Figure 1,

Figure 4 is a fragmentary sectional view taken on the line 4-4 of Figure 3,

Figure 5 is a fragmentary sectional view taken on the line 5-5 of Figure 3,

Figure 6 is a detailed side elevation of a modified form of this invention connected with a drum which is partly broken away,

Figure 7 is a plan view of the device shown in Figure 6, and

Figure 8 is a fragmentary sectional view taken on the line 8-8 of Figure 6.

Referring to the drawings, the numeral 10 designates generally a base, which in the present instance is of rectangular configuration. The base 10 has extending upwardly from one side thereof, substantially midway between the ends a tubular guide and cymbal support 11.

The support 11 includes an offset lower portion 12 and an elongated sliding rod 14 is slidable through the tubular support and along the offset member 12. A lower cymbal 15 is secured to the

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upper end of the stationary member 11 and an upper cymbal member 16 is secured to the upper end of the rod or slide member 14.

A pair of elongated links 17 and 18 are pivotally connected together on a pivot 19 which extends through a fork 20 fixedly carried by the lower end of the slide rod 14. The outer end of the link 17 is formed with an elongated slot 21 through which a pivot pin 22 engages, the pin 22 being carried by an upstanding support 23 which is fixed to the base 10.

The link 18 is provided with an elongated slot 24 through which a pivot pin 25 extends and the pin 25 is carried by an upwardly extending link 26 which is pivoted at 27 to the base 10.

An elongated bowed spring 28 is disposed below the fork 20 and the joint between the adjacent ends of the links 17 and 18, and is secured as at 29 to the adjacent edge of the base 10. The spring 28 is adapted to constantly urge the slide rod 14 upwardly so as to maintain the upper cymbal member 16 in spaced relation to the lower cymbal member 15.

An operating pedal generally designated as 30 is rockably carried by the base 10, being rockably mounted on a transversely extending pivot bolt 31 which engages through openings 32 and 33 carried by the supporting member 12 and a laterally disposed supporting member 34 respectively.

The pedal 30 is provided in one edge thereof with a series of spaced openings 35 and 36 adjacent the opposite ends thereof in selected ones of which laterally projecting pins 37 and 38 respectively are adapted to engage. The pins 37 and 38 extend over the upper edges of the links 17 and 18 so that vertical rocking of the pedal 30 will effect downward rocking of the links 17 and 18.

A heel plate 39 is secured to one end of the pedal 30, being formed with a pair of threaded studs 40 which engage through selected pairs of openings 41 formed in the pedal 30. The heel plate 39 includes an upwardly extending flange 42 against which the heel of the player is adapted to engage for holding the foot against rearward movement on the pedal 30.

In order to provide for holding the base 10 against tilting or rocking, the base adjacent one end thereof is provided with a pair of lateral extending base extension rods 43 which are threaded as at 44 into the opposite edges of the base 10.

Referring now to Figures 6, 7 and 8, there is disclosed a slightly modified form of this invention. A base 10a is provided which is similar

to the base 10, but is formed with an extension 45 extending from one end thereof which forms a rest for at least an edge of a drum D. The rim 46 of the drum which clamps the head on one side thereof is clamped to the base extension 45 by means of a clamping bar 47 through which a thumb bolt 48 engages.

The base 10a has disposed adjacent one edge thereof a pair of rockable links 17a and 18a similar to the links 17 and 18, and the links 17a and 18a are rockably carried by upstanding supports 23a and 25a. The inner ends of the links 17a and 18a are pivotally connected to a vertical slide rod 14a which is slidable in a tubular guide 11a extending upwardly from the base and carried by an upstanding support 12a.

A striker or beater 49 is fixed to a shaft 50 which is journaled between a pair of upstanding bearings 51 carried by the base extension 45. The striker 49 is constantly urged to inoperative position with respect to the adjacent head of the drum D by means of a spring 52 which is fixed at its upper end to a downwardly extending arm 53 carried by the striker 49 and fixed at its lower end to the base extension 45.

A crank arm 54 is fixed to the shaft 50 at one end thereof and is adapted when the striker or beater 49 is in inoperative position, to be disposed in a horizontal position as shown in Figure 6. The arm 54 has connected thereto one end of an elongated lever 55 which is pivotally mounted between the ends thereof on an upstanding supporting bar 56 pivotally engaged at one end to base 10a.

The lever 55 at its outer end is formed with an elongated slot 57 through which a pivot pin 58 extends. Slot and pin connection is provided between the outer end of the lever 55 and the crank arm 54. The inner end of the lever 55 is pivotally connected as at 58 to the upper end of the slide rod 14a.

A pedal 30a similar to the pedal 30 is rockably carried by the base 10a and is provided with a pair of laterally projecting pins 37a and 38a which engage the upper edges of the links 17a and 18a.

The heel plate 39a is adjustably secured on the upper side of the pedal 30a in the same manner as the heel plate 39 is secured to the pedal 30.

In order to provide for vertical adjustment of the pedal 30, the underside of the pedal is formed with a depending, transversely disposed rib 60 which is formed with a series of vertically spaced openings 61 through a selected one of which the pivot bolt 31 is adapted to engage.

In the use and operation of this device, the instrument comprising the cymbals 15 and 16 is secured to the fixed support 11 and the movable rod 14 respectively. The operator will place one foot on the pedal 30 and rocking of this pedal in either direction will cause either pin 37 or pin 38 to depress the links 17 and 18 and move slide rod 14 downwardly against the tension of the spring 28.

The rocking of the pedal 30 can be effected by first heel and toe pressure on the pedal so that the slide member 14 may be vertically reciprocated at the desired rate.

Where the operator is for use with a drum, the beater for the drum is connected with the upper rock lever 55 and the drum clamped to the forward end of the base extension 45. The beater 49 is reciprocated in the same manner as the slide rod 20 was reciprocated by rocking the

beater 30a either from the rear or from the front or alternately from the rear and the front.

Having thus described my invention, what I claim is:

1. An instrument beater operator comprising a base, a pedal above said base, means rockably supporting said pedal midway of the ends of the latter, a pair of vertically rockable links, means rockably supporting the outer ends of said links at one side of said base, a vertically disposed tubular guide fixedly carried by said one side of said base, a slide rod engaging said guide, means pivotally connecting said rod and the inner ends of said links together whereby vertical rocking of said links will effect vertical movement of said rod, means securing one member of an instrument to said guide, means securing another member of an instrument to said rod, a spring carried by said base constantly urging said rod upwardly to dispose said instrument members in spaced relation, and laterally projecting pins carried by an edge of said pedal engaging the upper edges of said links whereby rocking of said pedal from either end thereof will effect vertical rocking of said links and vertical movement of said rod.

2. An instrument beater operator comprising an elongated base, means clamping an instrument to one end of said base, a beater for said instrument, means rockably supporting said beater from said base, a spring constantly urging said beater to inoperative position, said beater including a horizontally disposed shaft, a crank arm fixed to one end of said shaft, a pedal rockably carried by said base, a pair of elongated links, means rockably mounting the outer ends of said links on said base, a vertically disposed guide carried by said base, a slide rod engaging said guide, means securing the lower end of said rod to the inner ends of said links, an elongated rock lever, means rockably supporting said lever above said base, means pivotally connecting the outer end of said lever to said crank arm, means pivotally connecting the inner end of said rock lever to said rod, and laterally projecting means carried by said pedal overlying said links whereby rocking of said pedal from either end thereof will effect downward rocking of said links and corresponding forward rocking of said beater.

3. A foot actuated operator for percussion musical instruments comprising an elongated base, a guide upstanding from said base adjacent the mid-length location of the latter, an operating rod slidably supported by said guide, a foot pedal pivotally mounted intermediate its length on said base near the mid-length location of the latter for rocking movement in both directions about such pivotal connection, a pair of links extending along one side of said base with their proximal ends pivotally interconnected and pivotally connected to the lower end of said operating rod, upstanding supports at the opposite ends of said base pivotally connected at their upper ends to distal ends of respective links, resilient means supported on said base urging said operating rod upwardly, and means carried by said foot pedal near the opposite ends of the latter and respectively engageable with said links to depress said links and move said operating rod downwardly upon rocking movement of said pedal in either direction relative to said base.

4. A foot actuated operator for percussion musical instruments comprising an elongated base, a guide upstanding from said base adjacent the mid-length location of the latter, an operating

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rod slidably supported by said guide, a foot pedal pivotally mounted intermediate its length on said base near the mid-length location of the latter for rocking movement in both directions about such pivotal connection, a pair of links extending along one side of said base with their proximal ends pivotally interconnected and pivotally connected to the lower end of said operating rod, upstanding supports at the opposite ends of said base pivotally connected at their upper ends to distal ends of respective links, resilient means supported on said base urging said operating rod upwardly, and means carried by said foot pedal near the opposite ends of the latter and respectively engageable with said links to depress said links and move said operating rod downwardly upon rocking movement of said pedal in either direction relative to said base, said guide means comprising a tubular portion disposed above said links and slidably receiving said operating rod, and an offset portion extending from the lower end of said tubular portion to said base.

5. A foot actuated operator for percussion musical instruments comprising an elongated base, a guide upstanding from said base adjacent the mid-length location of the latter, an operating rod slidably supported by said guide, a foot pedal pivotally mounted intermediate its length on said base near the mid-length location of the latter for rocking movement in both directions about such pivotal connection, a pair of links extending along one side of said base with their proximal ends pivotally interconnected and pivotally connected to the lower end of said operating rod, upstanding supports at the opposite ends of said base pivotally connected at their upper ends to distal ends of respective links, resilient means supported on said base urging said operating rod upwardly, means carried by said foot pedal near the opposite ends of the latter and respectively engageable with said links to depress said links and move said operating rod downwardly upon rocking movement of said pedal in either direction relative to said base, and an extension rod detachably secured at one end to said base at one side of the latter and projecting outwardly of said base substantially perpendicular to said one side to increase the stability of said operator.

6. A foot actuated operator for percussion musical instruments comprising an elongated base, a guide upstanding from said base adjacent the mid-length location of the latter, an operating rod slidably supported by said guide, a foot pedal pivotally mounted intermediate its length on said base near the mid-length location of the latter for rocking movement in both directions about such pivotal connection, a pair of links extending along one side of said base with their proximal ends pivotally interconnected and pivotally connected to the lower end of said operating rod, upstanding supports at the opposite ends of said

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base pivotally connected at their upper ends to distal ends of respective links, resilient means supported on said base urging said operating rod upwardly, means carried by said foot pedal near the opposite ends of the latter and respectively engageable with said links to depress said links and move said operating rod downwardly upon rocking movement of said pedal in either direction relative to said base, means on said base near one end of the latter for securing an instrument thereto, a striker pivotally mounted on said base adjacent said instrument securing means, and means pivotally supported on said base connecting said operating rod to said striker to move said striker toward an instrument secured to said base when said operating rod is moved downwardly by said foot pedal.

7. A foot actuated operator for percussion musical instruments comprising an elongated base, a guide upstanding from said base adjacent the mid-length location of the latter, an operating rod slidably supported by said guide, a foot pedal pivotally mounted intermediate its length on said base near the mid-length location of the latter for rocking movement in both directions about such pivotal connection, a pair of links extending along one side of said base with their proximal ends pivotally interconnected and pivotally connected to the lower end of said operating rod, upstanding supports at the opposite ends of said base pivotally connected at their upper ends to distal ends of respective links, resilient means supported on said base urging said operating rod upwardly, means carried by said foot pedal near the opposite ends of the latter and respectively engageable with said links to depress said links and move said operating rod downwardly upon rocking movement of said pedal in either direction relative to said base, said guide means comprising a tubular portion disposed above said links and slidably receiving said operating rod and an offset portion extending from the lower end of said tubular portion to said base, said tubular guide portion being engageable at its upper end with a lower instrument component and said operating rod being engageable at its upper end with an upper instrument component and effective to move such upper instrument component to strike the lower instrument component of such instrument upon downward movement of said operating rod by said foot pedal.

EMERY DEZSO.

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