Nov. 18, 1930. J. VERRECCHIA 1,782,247

AUTOMATIC DRUM PLAYER

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Fig. 2.

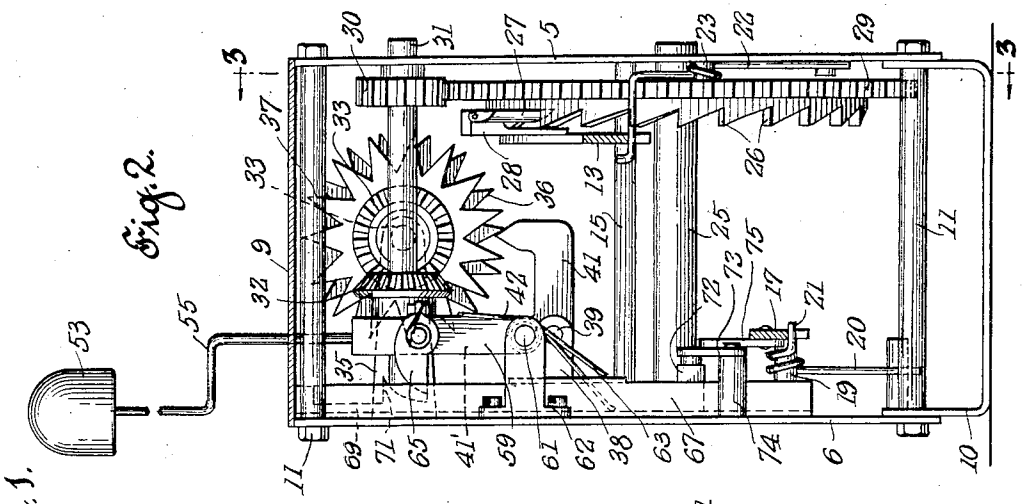
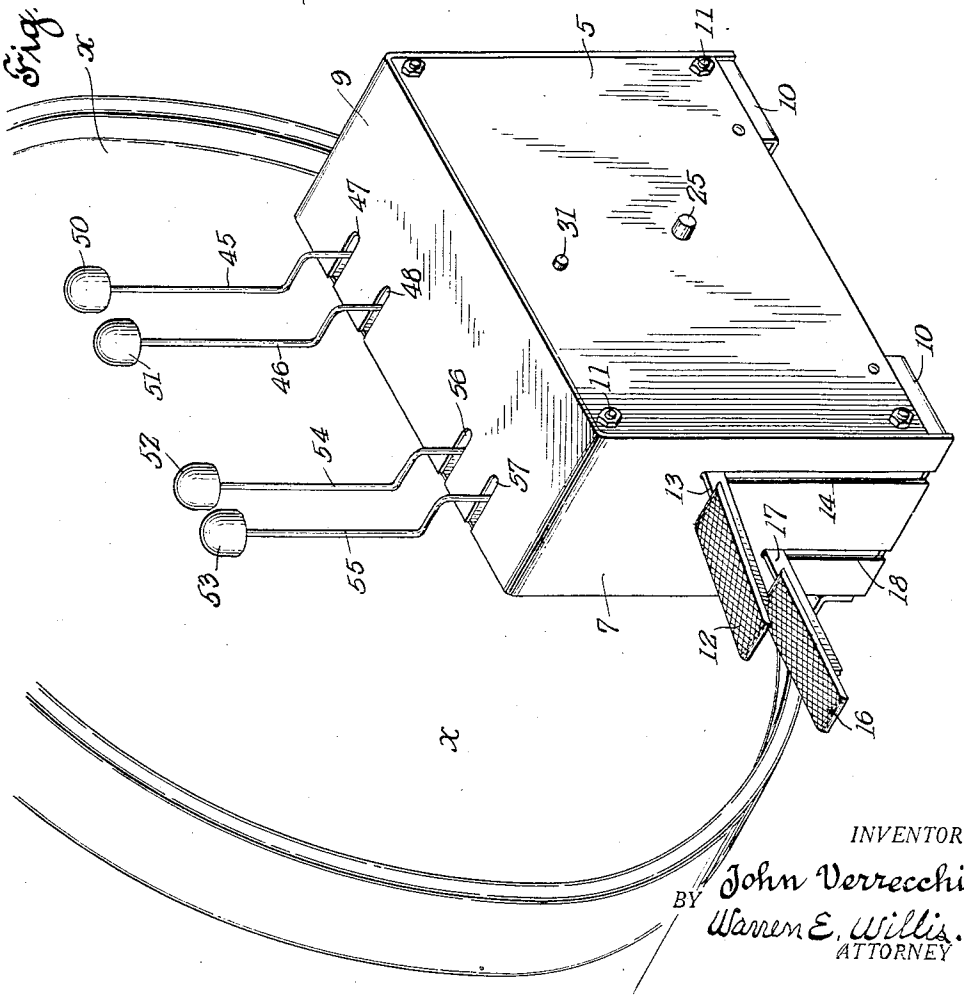


Fig. 1.



INVENTOR.

BY John Verrecchia

Warren E. Willis.

ATTORNEY

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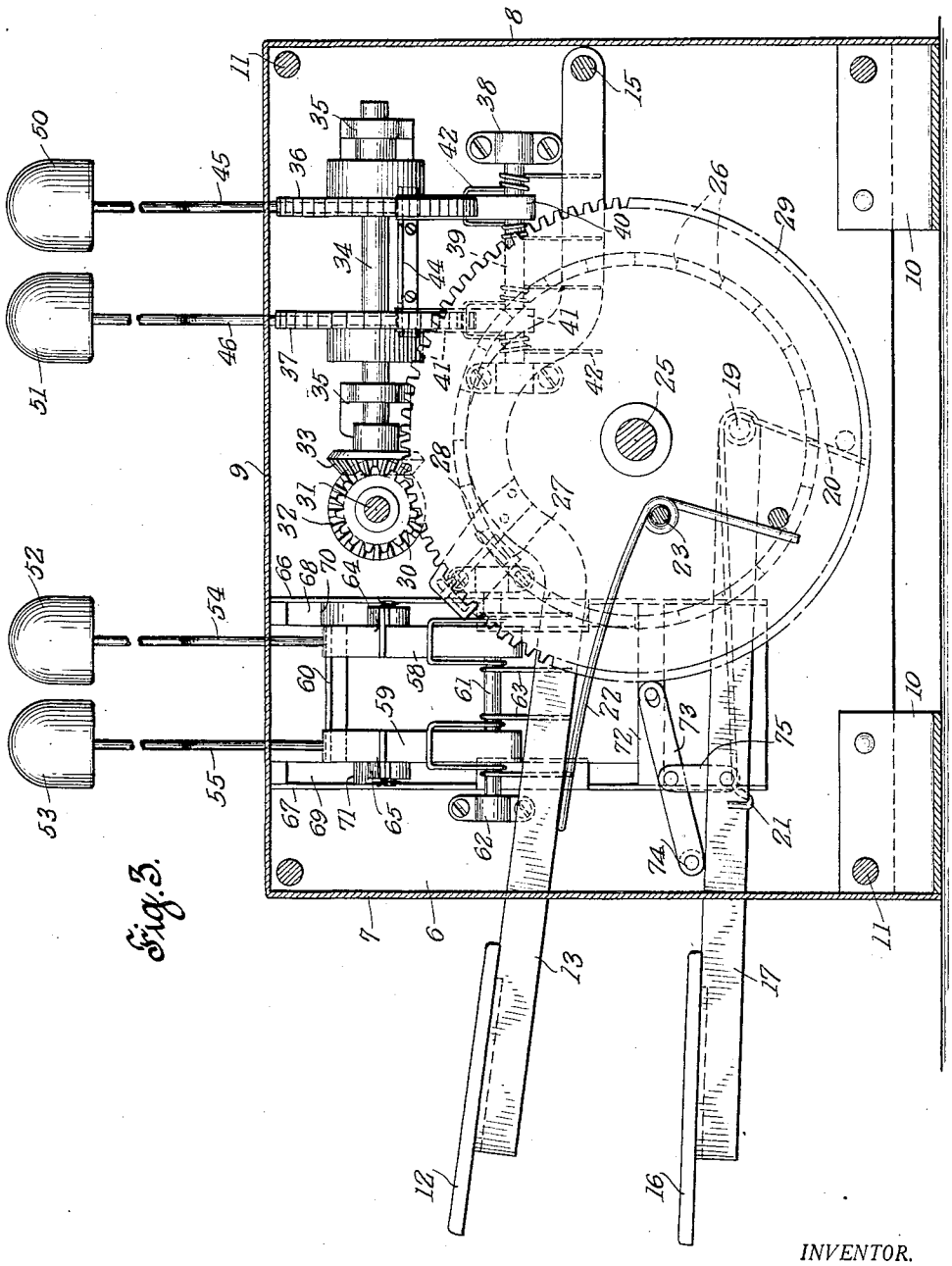


Fig. 3.

INVENTOR.

BY John Verrecchia

Warren E. Willis.

ATTORNEY

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UNITED STATES PATENT OFFICE

JOHN VERRECCHIA, OF NEWARK, NEW JERSEY

AUTOMATIC DRUM PLAYER

Application filed October 24, 1927. Serial No. 228,168.

This invention relates to instrument playing devices with special reference to drum beating apparatus as applied to snare and like drums.

In small bands and orchestras it is quite common for the performers to play several instruments, at different times, to give the effect of a larger organization and it is the main object of the present invention to provide means whereby a performer is enabled to play two instruments at the same time, one of these instruments being a drum.

A further feature is in the provision of an apparatus which is pedally actuated to produce a beating effect and which in no wise interferes with the use of the player's hands in performing upon another instrument of a different character.

Another object is to provide means for producing a rapid tattoo effect by a pair of drumsticks or beaters upon the drum by the depression of a pedal, another pedal actuating a second pair of beaters at a greatly reduced speed.

Finally, to provide an apparatus capable of beating a juxtaposed snare drum in an effective and easy manner to produce the taps or trills required.

These several objects are attained by the novel construction and combination of parts herein described and shown in the accompanying drawings, forming a material part of this disclosure, and in which:—

Figure 1 is a perspective view of an embodiment of the invention, illustrating its application to a conventional drum.

Figure 2 is an end view of the apparatus, the end wall of the casing being removed and the actuating levers being shown in section.

Figure 3 is a sectional view of the same, taken on line 3—3 of Figure 2.

Referring to Figure 1 the device will be seen to consist of a sheet metal casing having a series of beaters projecting into position to selectively strike the face of a drum X held in close proximity to one of its sides.

In greater detail, the casing is composed of two side plates 5 and 6, the latter being adjacent the drum X, and a pair of ends 7 and 8 united by a top plate 9.

Attached to the sides 5 and 6, at their lower inner end edges are supports 10, held by corner bolts 11, similar bolts also passing through the upper corners of the side walls.

A pedal 12 is fixed on the front end of a lever 13 extending through a slot 14 in the front wall 7, the lever being pivoted on a rod 15 extending between the sides 5 and 6 midway their height, close to the near end wall 8.

A similar pedal 16 mounted on a lever 17 operates in a slot 18 in the front wall and is pivoted on a stud 19 set in the front wall 6 and coiled about the stud is a spring 20 reaching to the front and provided with a hook 21 in which the lever is seated to be held in a normally raised position. A like spring 22 is coiled about a rod 23 and adapted to maintain the lever 13 in a raised position.

A spindle 25 journalled substantially central in the casing, carries a ratchet wheel 26 engageable by a pawl 27 pivoted to an arm 28 fixed on the lever 13, at a point curved upwardly to clear the spindle as it is operated.

Fixed on the back of the ratchet wheel 26, adjacent the wall 5, is a spur gear 29 meshed with a pinion 30 rigid on a spindle 31 journalled in the sides and having fixed on it a bevel gear 32 meshed with a mating gear 33 fixed on the inner end of a spindle 34. This spindle is mounted in a pair of brackets 35 fixed on the inner face of the wall 6, and has secured on it a pair of toothed wheels 36 and 37.

A second pair of brackets 38, below and parallel with the brackets 35 and closer to the supporting wall 6, have mounted in them a rod 39 acting as a pivot for a pair of bell-crank levers 40 and 41, each having upturned lower terminals reaching into position to be engaged by the teeth of the wheels 36 and 37 as the latter are caused to rotate.

The upright arms 40′ and 41′ of the bell-crank-levers are pressed individually outward by springs 42, causing the opposed ends of the levers to yield during the passage of the teeth of the wheels 36 and 37 over them, these wheels being arranged to present their teeth in staggered relation whereby the levers are actuated alternately.

Fixed in the upper ends of the lever arms 40′ and 41′, which are limited in their outward stroke by a block 44, are resilient rods 45 and 46 passing through slots 47 and 48 in the casing cover 9, and bent at an offset outwardly, their raised ends carrying beaters 50 and 51 adapted to contact with the side of the drum X, beating a rapid tattoo or trill in accordance with the speed of depression of the impulse pedal 12, which is obviously raised by the spring 22 upon being released.

Another pair of beaters 52 and 53, fixed on the upper ends of resilient rods 54 and 55, pass through slots 56 and 57 in the cover plate 9. These rods are rigidly secured in the upper ends of levers 58 and 59 which are limited in their outward movement by a block 60, the levers being pivoted on a spindle 61 carried in brackets 62 fixed on the inner side of the wall 6.

The levers are pressed normally against the block 60 by pairs of bent springs 63 and each lever is provided with pins on which is mounted spring urged dogs 64 and 65 projecting towards the plate 6.

Fixed to the plate 6 is a pair of vertical guides 66 and 67 in which are slidably engaged bars 68 and 69 having on the inner surfaces lugs 70 and 71 arranged in different horizontal planes and adapted to engage the dogs 64 and 65 to raise them in alternate relation, thus moving the beaters to strike the drum one after the other.

The bars 68 and 69 are connected near their lower ends by a rigid cross bar 72, at the center of which is pivotally attached a lever 73, pivoted at 74 to the side wall 6 and connected by a link 75 to the pedal lever 17.

In operation, upon depressing the lever 17 the beater hammer 53 will strike the drum and at a full complete stroke of the lever the beater hammer 52 will also strike. As the lever 17 is instantly returned to its normal raised position by the spring 20, this operation may be repeated, producing a relatively slow beating effect of the drum, that may be continued indefinitely.

When a more rapid beat is required the other pedal 13 is depressed, which, as has been described, produces action of the beaters or hammers 50 and 51 at a greater velocity which may be continued as desired by repeatedly depressing the lever 17.

As changes of construction could be made within the scope of the invention, it is intended that all matter contained in the foregoing description or shown in the accompanying drawings shall be interpreted as illustrative and not in a limiting sense.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent, is:—

1. A drum beater comprising a pair of beater hammers adapted to strike a drum, a single pedally actuated lever to impart motion to said hammers, intermediate gear means for causing the hammers to strike alternately, and resilient means for imparting the stroke of the hammers.

2. A mechanical drum beater comprising a pair of beaters having pivotal supports, a stop for the beaters, springs to press said beaters against the stop, pivoted pawls on said supports, a pedally actuated lever, a pair of slides actuated by said lever, and operative connections between said slides and said pawls to cause oscillation of said beaters, the oscillative movement occurring alternately.

3. A drum beater comprising a casing, two pairs of beaters extending operably through said casing, a lever for each pair of beaters, said levers being pivoted in the casing and independently operable, a pair of rotary star wheels having their teeth arranged in staggered relation, a gear train for said star wheels driven by one of said levers, arms pivoted in the casing to carry one pair of said beaters, means on said arms cooperative with the teeth of said star wheels to oscillate the arm carried beaters alternately, and means actuated by the other of said levers to operate the other pair of beaters in alternate relation one to the other.

4. A drum beater comprising a casing, two pairs of beaters extending operably through said casing, a foot lever for each pair of beaters, said foot levers being pivoted in the casing and independently operable, upright levers pivoted in the casing to carry said beaters, said beater levers being pressed resiliently in one direction, pawls pivoted on the beater levers, slides movable vertically in the casing, means on said slides to engage at different heights with said pawls, operative connections between one of the foot levers and said slides, means actuated by the other of the foot levers to actuate the other pair of beaters and means for causing the beaters in each pair to operate in staggered relation.

In testimony whereof I affix my signature.

JOHN VERRECCHIA.