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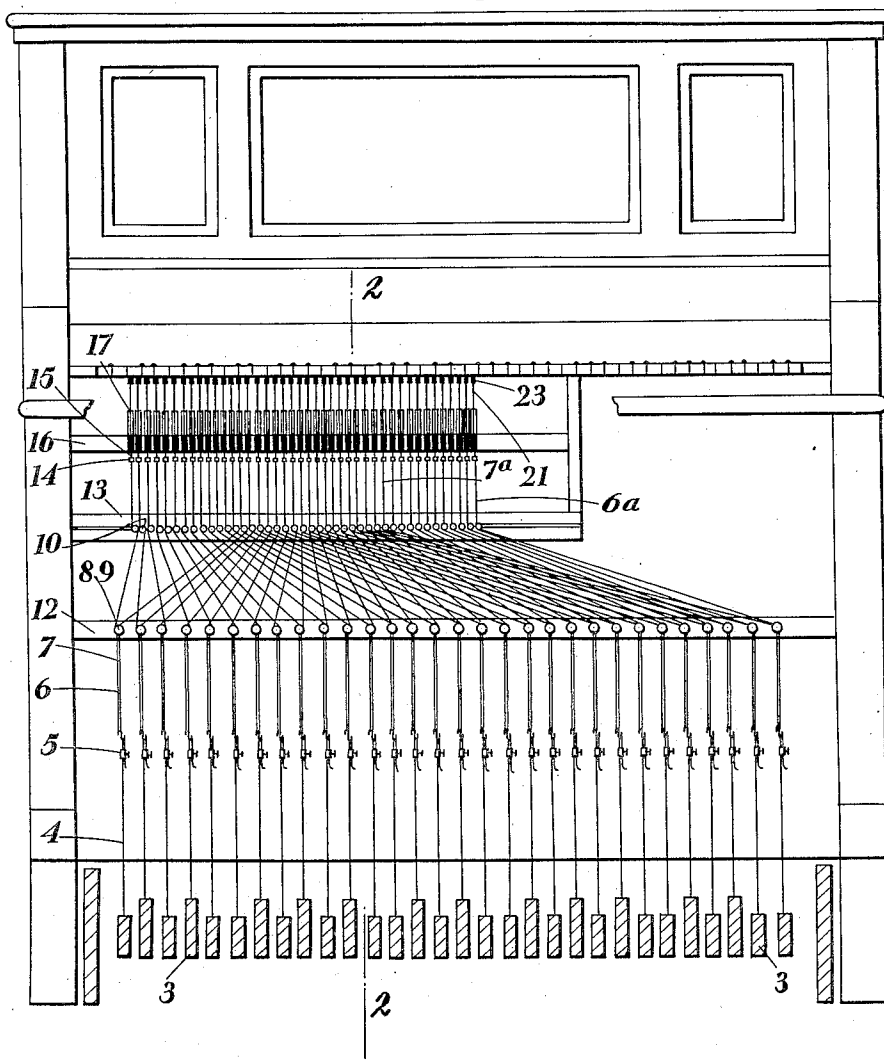
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PEDAL ACTUATED MEANS FOR PIANOS FOR OPERATING SIMULTANEOUSLY TWO KEYS

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2 Sheets-Sheet 1

Fig. 1.



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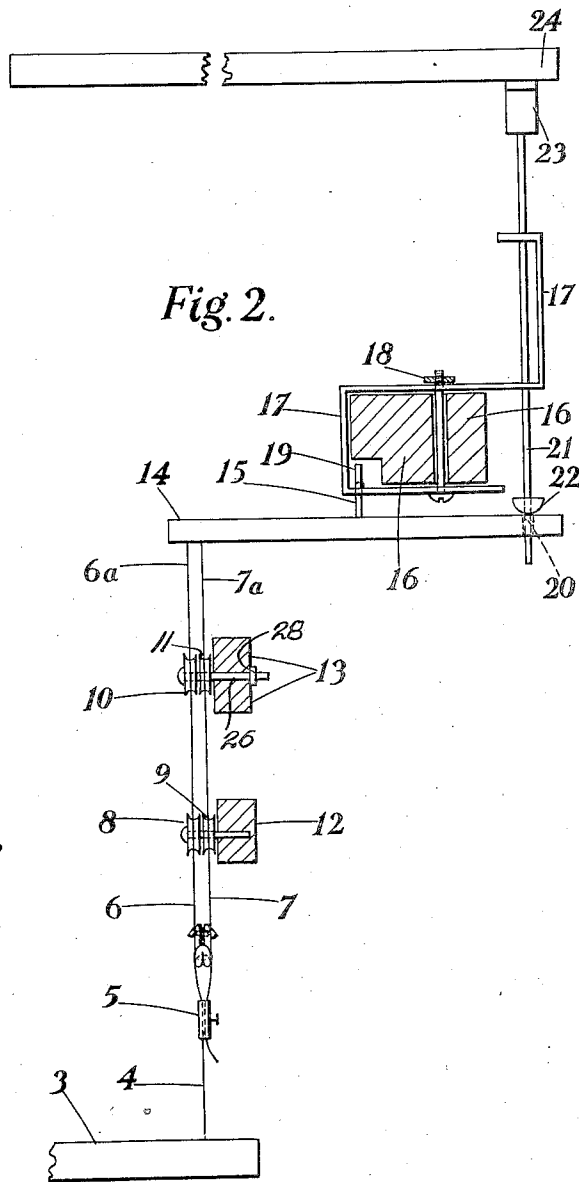
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PEDAL ACTUATED MEANS FOR PIANOS FOR OPERATING SIMULTANEOUSLY TWO KEYS

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2 Claims. (Cl. 84—426)

This invention has reference to improvements in pedal actuated means for pianos for operating simultaneously two keys.

It is known to employ strings or cords which at one end are connected to a pedal and after passing through eyelets or over a series of pulleys said cords are connected to the two keys that on actuation sound an octave, but owing to the method of employing the eyelets or pulleys the cords are subjected to such considerable wear that they have been known to break even after quite moderate use.

Further, it has been found necessary to employ springs in order to overcome the resistance of the cords, pulleys and connected mechanism to return them to their normal positions when the related pedal is released and this also involves a defect in that it renders the production of rapid repetition (as required by modern organ music) and legato touch very difficult. Also the springs involve delicate adjustment in order that all the notes of the whole series (about 42 at the lower or bass end of the piano) to which the devices are applied may be sounded at equal strength or softness without requiring the player to press either harder or less hard on some of the pedals in order to produce the desired effect.

The object of my invention is to obviate these defects.

My invention is illustrated diagrammatically in the accompanying drawings in which:—

Fig. 1 is a front elevation of a piano (with the bottom panel removed) showing only the keys (about 42) at the lower or bass end to which my invention is applied. Fig. 2 is an enlarged section on line 2—2 of Fig. 1.

I provide ordinary spring controlled organ pedals 3 and attach to each of them strings or cords 4. To these cords I attach an adjustable hook or the like 5. To this hook I loop a cord, forming two cords 6 and 7. These cords 6 and 7 then pass over a pair of pulleys 8, 9, supported on a bar 12. The cord 6 then passes to another pulley 10 supported on a screw 26 located between two bars 13. This screw is provided at its end with a nut 28, by use of which the pulley is adjusted or fixed in any desired position. Immediately above this pulley is a lever 14 to which the cord 6 is attached. This lever 14 is pivoted at or about its centre by means of a looped cord 15. Above the lever 14 I provide two bars 16 and to these I mount a bracket 17, and clamp this bracket to the desired position on the bars by tightening the nut 18. The bottom of the

bracket has a tongue 19, punched inwards to which the loop 15 is hooked.

The other end of the lever 14 is provided with an aperture 20 within which a rod 21 rests; a stop washer or the like 22 is provided near the end of the rod 21 to prevent the latter dropping through. This rod slides vertically in holes provided in the upright arm of the bracket 17. At the top of the rod 21 I secure a felted buffer 23 which raises the back end of the usual piano key 24 and thereby causes the note to be struck, which takes place when the pedal 3 is depressed.

The cord 7 which passes over the pulley 11, operates in a similar manner to and simultaneously with the cord 6, but it operates the note which is the octave of that operated by the cord 6.

As will be seen the horizontal levers 14 suspended by the looped cords 15, are located below and in the same vertical plane as their related piano keys, and that the parts 6^a, 7^a, of the cords attached to the levers 14 are also in that plane, so that there is an almost frictionless mechanism which is not in any way interfered with by the vertical rods 21 that transmit upward movement from the rear ends of the levers 14 to the rear ends of their related piano keys. Further on the instant the pedal which has been depressed is released, the vertical rods 21 descend, by gravity, to release the related keys (which also resume their normal positions by the action of gravity) so that very rapid repetition is made possible. Then again the cushions on the top of the rods 21 together with the practically frictionless mechanism referred to ensure perfectly silent operation. Also in the complete mechanism no cord is subjected to more than two bends and as the related pulleys or rollers 8, 9, and 10 are in widely separated horizontal planes the cords are not subjected to more than very inconsiderable wear. The whole mechanism is very simple in construction and can easily be fitted in position.

What I claim is:

1. A pedal device for pianos comprising a series of pedals, one for each piano key of a series of keys, a single series of parallel, pivoted, key-actuating levers all of the same length, there being one lever for each of said piano keys and each lever being located directly below and parallel with the corresponding key, a connection between each lever and the corresponding key by which rocking movement of the lever actuates the key, and a flexible connection between each pedal and both the lever for the key cor-

responding to said pedal and the lever for the octave of said key.

2. A pedal device for pianos comprising a series of pedals, one for each piano key of a series of keys, a single series of parallel, pivoted, key-actuating levers all of the same length, there being one lever for each of said piano keys and each lever being located directly below and parallel with the corresponding key, a connection between each lever and the corresponding key

by which rocking movement of the lever actuates the key, a flexible connection between each pedal and both the lever for the key corresponding to said pedal and the lever for the octave of said key, two direction pulleys for each flexible connection arranged so that the portion of each connection leading from each pedal to a direction pulley and leading from a lever to a direction pulley extend in a vertical direction.

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