

(No Model.)

2 Sheets—Sheet 1.

O. FELDEN.
EXERCISING DEVICE.

No. 538,579.

Patented Apr. 30, 1895.

Fig. 1.

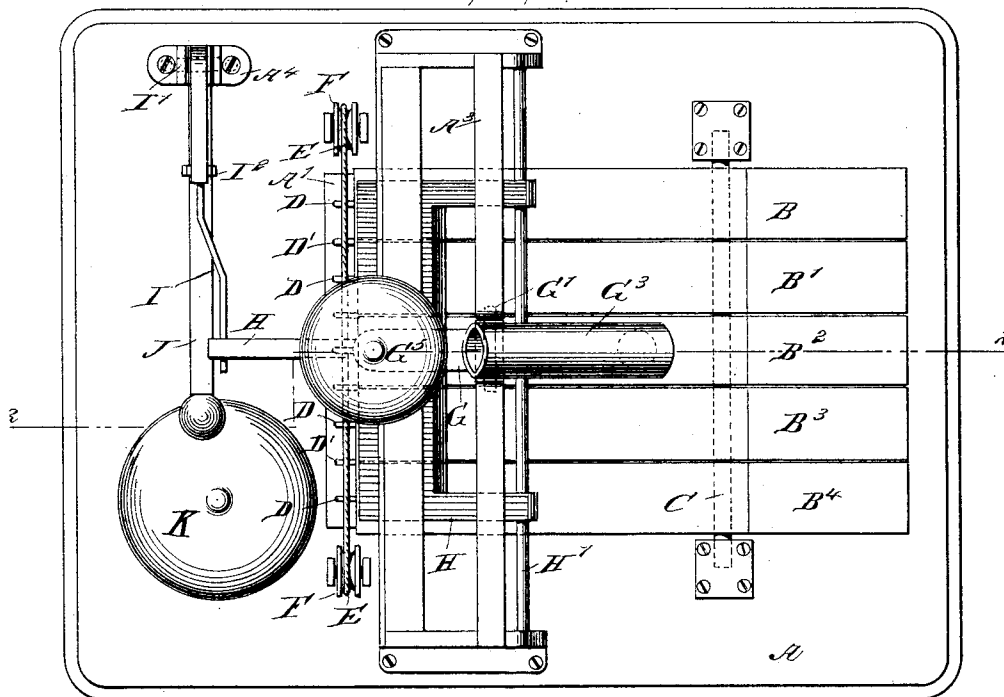
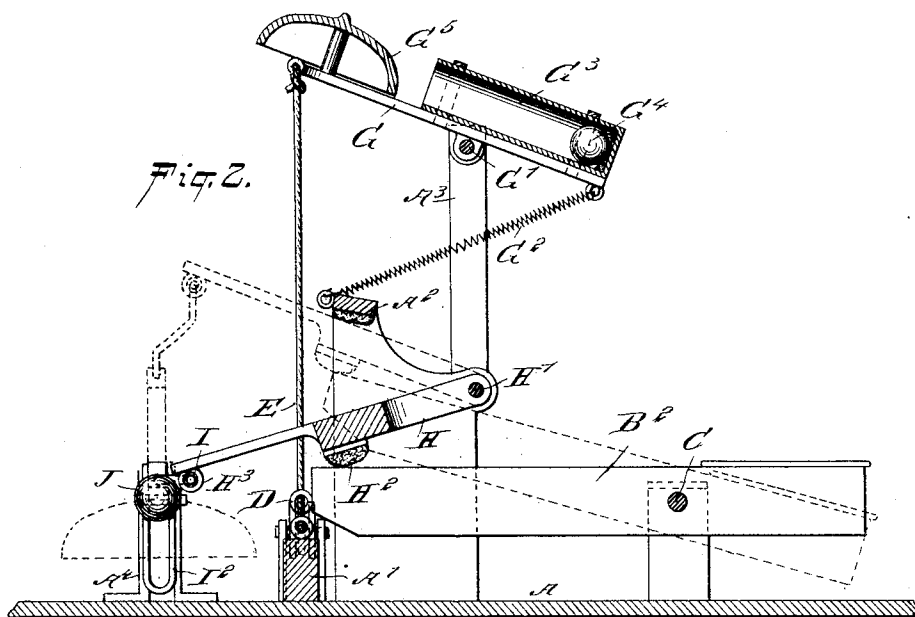


Fig. 2.



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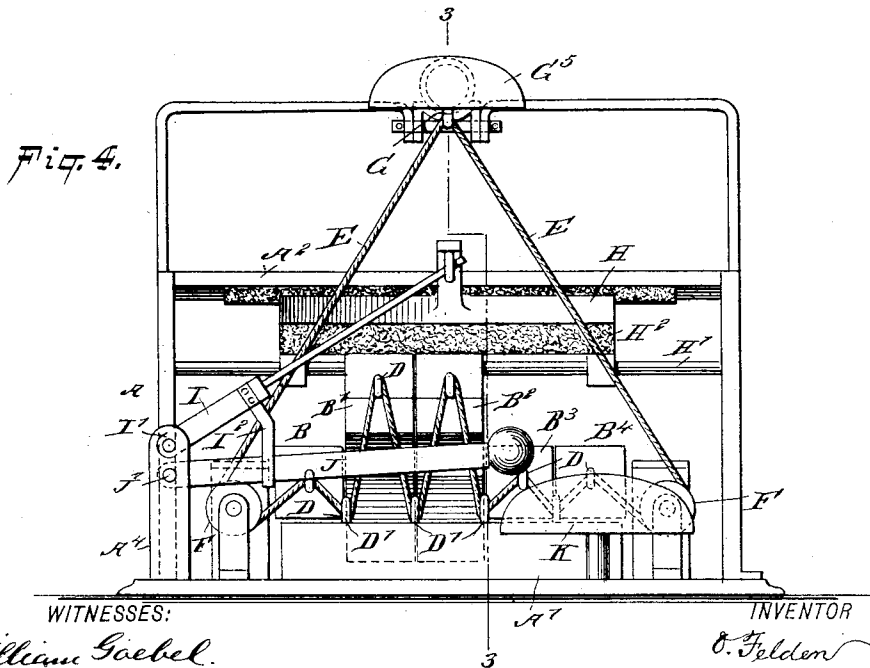
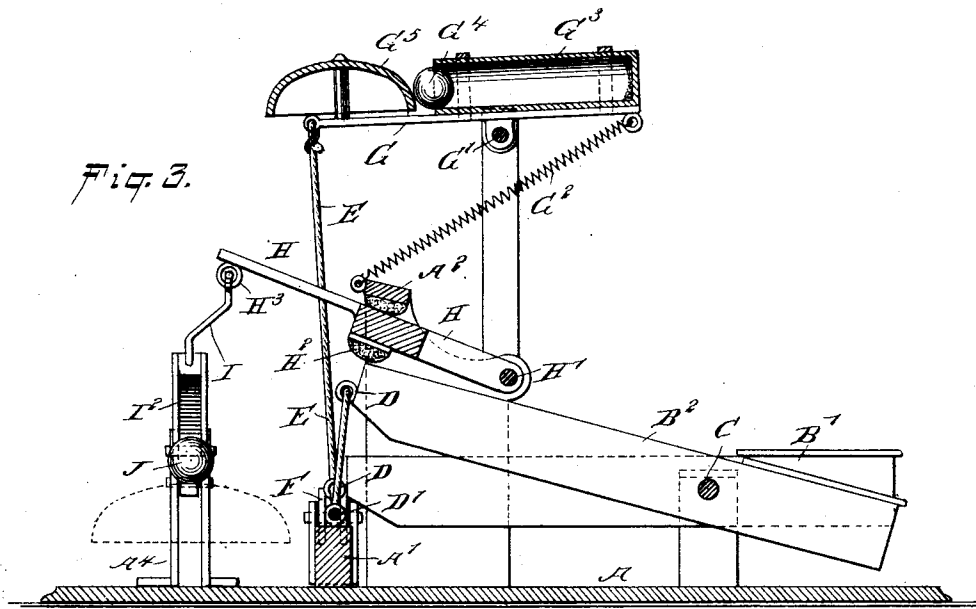
(No Model.)

2 Sheets—Sheet 2.

O. FELDEN.
EXERCISING DEVICE.

No. 538,579.

Patented Apr. 30, 1895.



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UNITED STATES PATENT OFFICE.

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EXERCISING DEVICE.

SPECIFICATION forming part of Letters Patent No. 538,579, dated April 30, 1895.

Application filed January 29, 1895. Serial No. 536,555. (No model.)

To all whom it may concern:

Be it known that I, OSCAR FELDEN, of Houston, in the county of Harris and State of Texas, have invented a new and Improved Exercising Device, of which the following is a full, clear, and exact description.

The invention relates to mute instruments; and its object is to provide a new and improved exercising device for teaching beginners the correct touch on the piano to systematically develop finger technic.

The invention consists principally of a series of mute keys and two sounding devices of different pitch connected with the said keys, so that when the latter are wrongly played, either of the two sounding devices will be actuated.

The invention also consists of certain parts and details and combinations of the same, as will be fully described hereinafter and then pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a plan view of the improvement. Fig. 2 is a sectional side elevation of the same on the line 2 2 of Fig. 1. Fig. 3 is a like view of the improvement on the line 3 3 of Fig. 4 and showing the parts in a different position, and Fig. 4 is a rear end view of the same.

As is well known the foundation of all modern playing is a connected style or legato playing, that is, one tone is to sound at the exact moment the next tone commences to sound. According to the mechanism of the piano, a string will vibrate and consequently the tone will sound, as long as the finger presses the key down, but as soon as the finger is raised the tone ceases to sound, because the damper falls down upon the string and stops the vibration. Furthermore, if the player wants to connect the tones, it is necessary to hold the first key until the exact moment when the second key is pressed down. If the first key is not held long enough, there will be an interval between the two tones and the tones will be disconnected. If the first key is held too long, two tones will be heard at the same time and the result will be in most cases, a very disagreeable dissonance.

The only way to produce the right legato touch, is to hold the palm of the hand and the wrist still, while the fingers are striking the

keys from the third or metacarpal joint. This requires strength of the fingers, and consequently, finger exercises to make the fingers strong and independent of each other. In order to aid beginners to properly exercise to obtain this legato touch is the object of the invention presently to be described in detail.

On a suitably constructed frame A is arranged a series of keys B, B', B², B³, B⁴, pivoted at C and provided at their rear ends with eyes D, through which extends the cord E, also passing through the eyes D' arranged alternately with the eyes D, and secured on a fixed transverse beam A', secured to the frame A. The cord E passes under pulleys F, arranged at the ends of the beam A', the cord then extending upward from both pulleys to connect with the rear end of a lever G, fulcrumed at G' on suitable standards A³ forming part of the frame A. This lever G is provided at its front end with a tube G³ closed at the front and open at the rear, as is plainly shown in Fig. 2, the said tube containing a ball G⁴, resting normally on the closed end of the tube G³ as the lever G stands in an inclined position.

At the rear end of the lever G is held a bell G⁵, adapted to face the open end of the tube G³, so that when the lever G is swung into the position shown in Fig. 3, then the cord E is pulled, and the ball G⁴ rolls along the tube G³ and against the bell G⁵, so as to sound the latter. A spring G² connects the front end of the lever G with a cushioned rail A² extending transversely and forming part of the frame. This spring G² normally holds the lever G in the inclined position shown in Fig. 2.

Over the rear ends of the keys B, B', B², B³ and B⁴ is arranged a lever H, fulcrumed at H' on the frame A, and provided at its under side with a cushioned rail H² normally resting on the rear ends of the keys B to B⁴, so that when either of the latter is pressed, an upward swinging motion is imparted to the lever H. On the rear or free end of the said lever H is secured an eye H³, engaged by a transversely extending arm I, fulcrumed at I' in a suitable bracket A⁴, erected on the frame A. The arm I is connected by a loop I² with a striker J, fulcrumed at J' in the bracket A⁴ directly below the arm I. The striker J is adapted to sound the bell K, secured on the frame A.

The operation is as follows: When the keys

B to B⁴ are played with the correct touch, neither of the two bells G⁵ or K will be sounded, it being understood that the correct touch consists in holding one key down until the exact moment the next key is struck, but if the keys are played with the wrong touch, either of the two bells G⁵ or K will be sounded. There are two mistakes possible in playing the keys. The first is that the player may hold the first key too long after the second key is struck, and in this case, the two keys, on account of being pressed, pull on the cord E sufficiently to cause a swinging of the lever G as previously described, see Figs. 3 and 4, so that ball G⁴ rolls down the tube G³ and strikes the bell G⁵ to sound the latter. It is understood that as long as one key only is pressed, the lever G is only moved slightly out of its inclined position, shown in Fig. 2, but as soon as the second key is pressed to the bottom, then the lever G swings to the position shown in Figs. 3 and 4, and the ball will commence to roll and sound the bell G⁵. The time it takes the ball to roll from the closed end of the tube to the open end near the bell G⁵ is the time allowed to raise the finger which strikes the first key. Now if this key is held just a moment longer, the ball will reach the bell and sound the same, so as to indicate the mistake made by the player. If the first finger is raised sufficiently soon, then the spring G² will return the lever G to the former position, shown in Figs. 1 and 2, without the ball striking the bell. Another mistake possible is that the player may not hold the first key down until the second key is struck, thus causing an interval between the two tones. This mistake is indicated by the lever H raising the arm I to actuate the striker J to sound the bell K, which latter, for the purpose of distinction, is of a different pitch to that of the bell G⁵. As soon as a key is struck, the lever II is raised up before the lever reaches the highest point, to raise by the arm I and loop I² the striker J. Now, if the first key is not held down until the second key is struck, or in other words, if the lever H is not kept at the highest point during the transfer of the pressure from the first to the second key, and the first lever is lowered in the least, then the striker J will fall upon the bell K and sound the same, to indicate to the player the mistake he has made.

It will be seen that by the arrangement described, the device will be a sure and unerring guide to the beginner to acquire the correct touch, and as soon as the user has the proper touch, then neither of the bells G⁵ or K will be sounded, but as soon as the player makes one of the two mistakes mentioned, the corresponding bell G⁵ or K will be sounded.

The device is very simple and durable in construction, does not take up very much room and can be conveniently carried from place to place and set upon a table for practice.

It is understood that I do not limit myself

to the number of keys shown and described, as the same may be increased or diminished without deviating from my invention.

In order to regulate the pressure necessary to actuate the keys B to B⁴, a spring G² of a different tension may be employed.

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

1. In an exercising device, the combination of a series of keys, a sounding device adapted to be operated from the keys, and means actuated by the simultaneous release and operation, respectively, of two of said keys, for holding the sounding device out of operation, substantially as set forth.

2. In an exercising device, the combination of a series of keys, two sounding devices, means actuated by continuous simultaneous pressure on two keys for actuating one sounding device, means for actuating the other sounding device from each of the keys, and means actuated by the simultaneous release and pressure respectively of two keys, for holding the last named sounding device out of operation, substantially as set forth.

3. In an exercising device, the combination of a series of keys, a sounding device, means comprising a movable bar for actuating the sounding device, and a connection between the respective keys and the movable bar, adapted to operate the bar to actuate the sounding device when two of the keys are continuously and simultaneously pressed, substantially as set forth.

4. An exercising device, provided with a sounding device adapted to be actuated from the keys and comprising a bell, a striker adapted to sound the bell, a pivoted arm having a loop connection with the said striker, and a lever adapted to be actuated from the keys and pivotally connected with the said pivoted arm, substantially as shown and described.

5. An exercising device, comprising a series of mute keys, a cord loosely connected with eyes on the said keys, the cord also passing through fixed eyes over which passes the said cord, a spring-pressed lever connected with the cord, a tube held on the lever and containing a ball, and a bell attached to the said lever in front of the open end of the tube, substantially as shown and described.

6. In an exercising device, the combination of a series of keys, a sounding device, means, comprising a movable piece for actuating the sounding device, means actuated by the pressure of one key for setting said piece in position to actuate the sounding device and means actuated by the simultaneous pressure of another key, for operating said piece to actuate the sounding device, substantially as set forth.

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Witnesses:

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