Dec. 31, 1929. A. Y. HALL 1,741,769

PIANO INSTRUCTION DEVICE

Filed Nov. 1, 1928 2 Sheets-Sheet 1

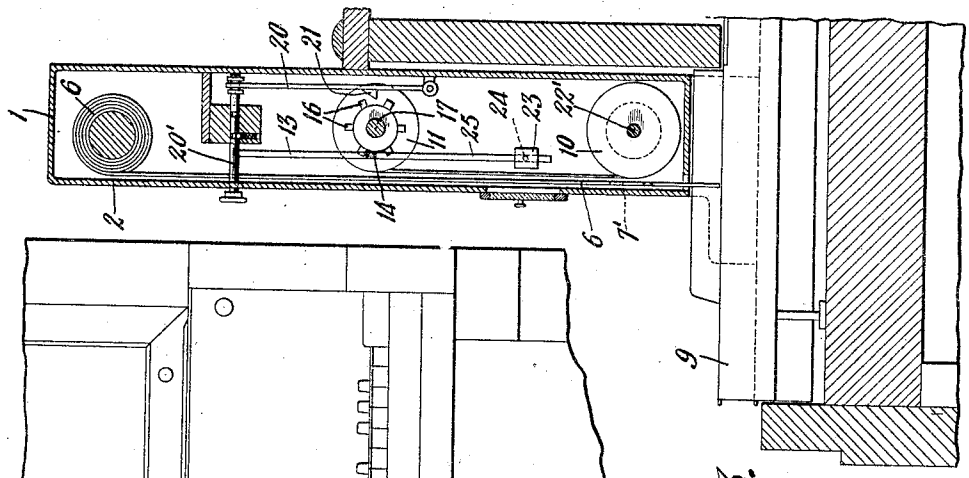


Fig. 3.

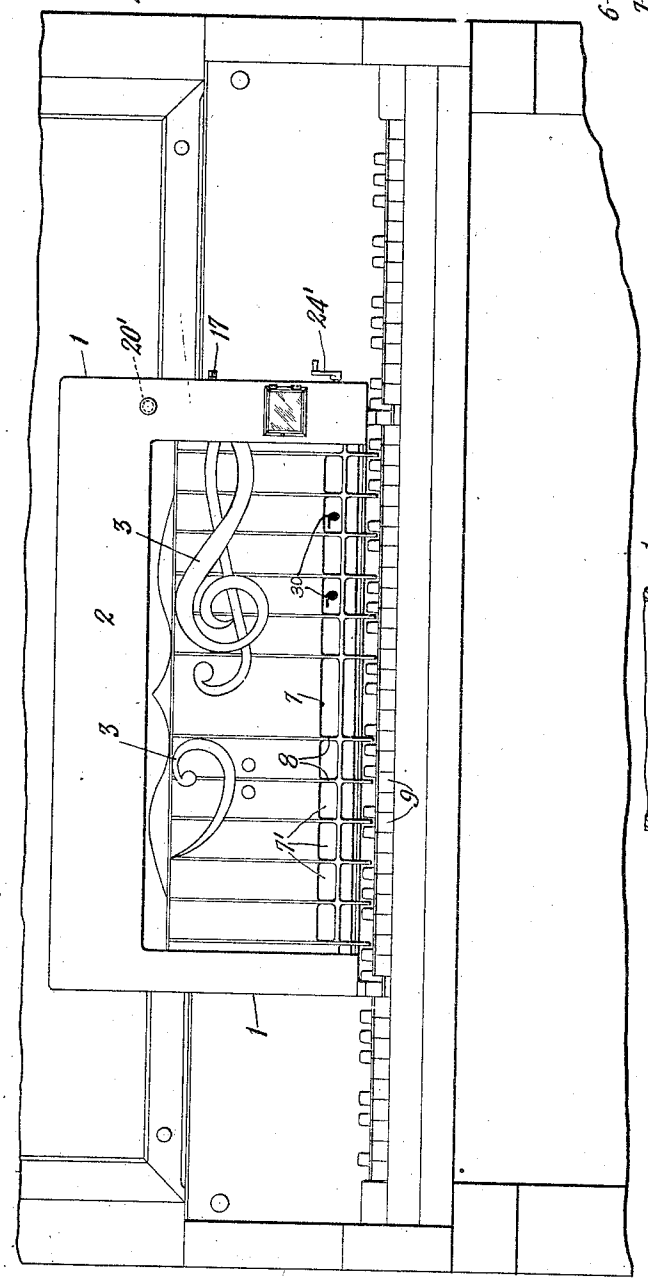


Fig. 1.

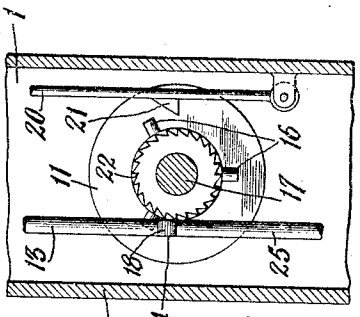


Fig. 4.

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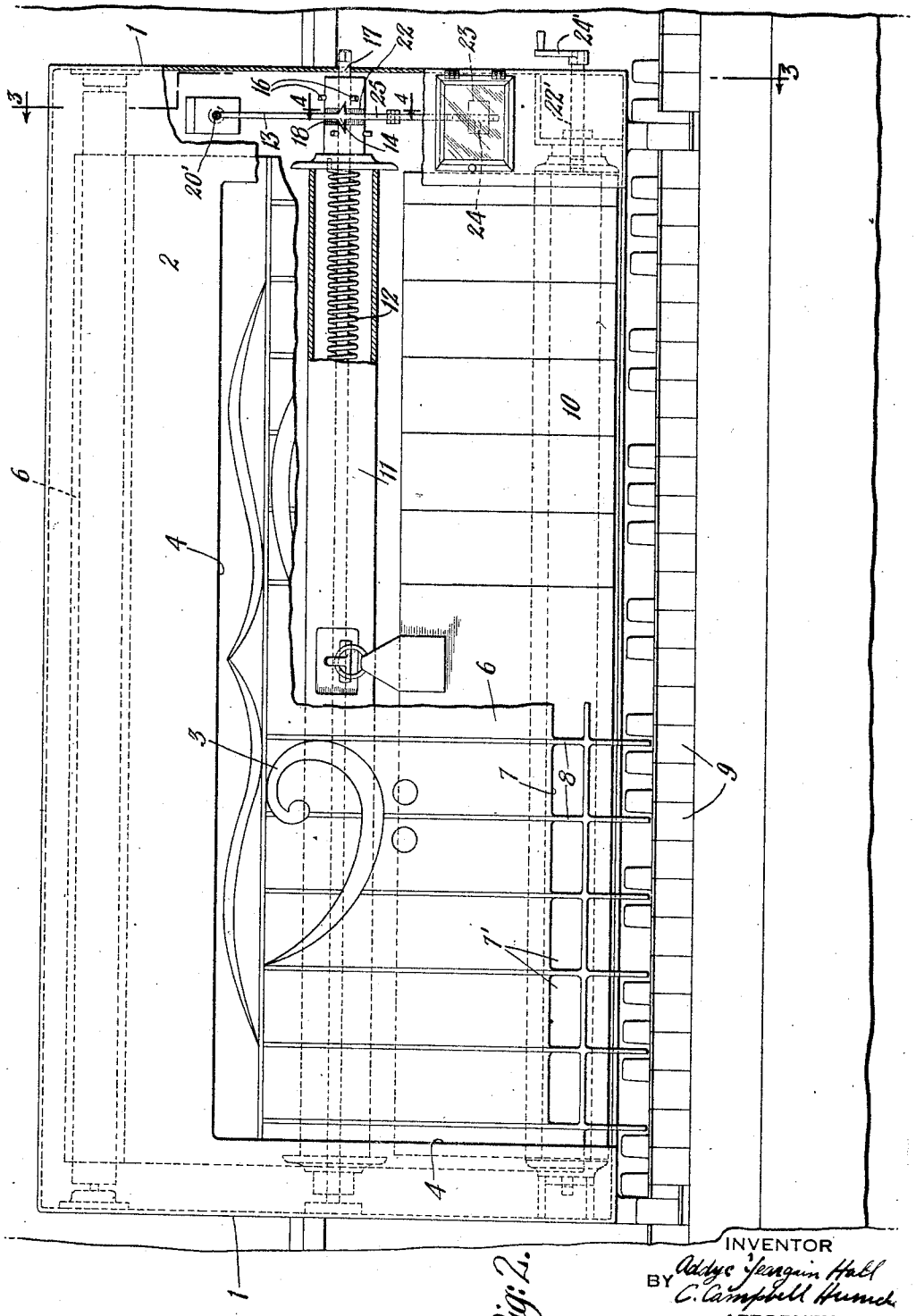


Fig. 2.

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UNITED STATES PATENT OFFICE

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PIANO-INSTRUCTION DEVICE

Application filed November 1, 1928. Serial No. 316,409.

This invention relates to a musical instruction device.

One of the objects of this invention is to provide a device wherein the elements of time, rhythm and tempo, and the relationship between the musical score and the keys of the instrument are coordinated in instruction and taught simultaneously. Another object of the invention is to provide means whereby the printed notes will appear adjacent to and above the key which they represent, such appearance taking place at the predetermined time of the score. Still another object of this invention is to provide a simple mechanism which may be permanently built in a piano or made separable therefrom having the great staff indicated thereon and having means for indicating the notes of a piece of music which appear above and adjacent to the keys and in the proper space or on the proper line of the great staff, such notes giving place to other notes in accordance with the time of the music. Other objects will appear more fully hereinafter.

Referring to the drawings:

Figure 1 is a front view in elevation showing the device when applied to a piano and embodying the principles of my invention.

Figure 2 is an enlarged detail view partly in section embodying the principles of my invention.

Figure 3 is a cross sectional view of my invention taken on line 3, 3, of Figure 2.

Figure 4 is an enlarged detail sectional view on line 4, 4, of Figure 2.

In carrying out my invention, I propose to provide a box or container 1 having a front 2. Front 2 also has an opening 4 to permit of the insertion of music roll 10 within box 1. Curtain 6 contains the representation of the great staff 3 so that when it is pulled down the opening 4 in the front 2 is covered and the great staff 3 is indicated on the curtain 6. Curtain 6 may be of the usual shade roll construction. The bottom of curtain 6 has an opening 7 running the width of the curtain surrounded by a frame of very light metal or other suitable material with cross bars 8 across the opening to continue the great lines of the staff 3 down to the keys 9. These cross bars 8 give an unbroken continuation of the great staff lines. The opening 7 in the curtain 6 as formed by the cross bars furnishes the openings 7′ through which the notes 30 printed on roll 10 may be seen. Within box 1, I also propose to provide a roller 11 which is spring operated by spring 12. In the embodiment shown, I have shown, in Figure 2, the use of a long spiral spring 12 within the roller 11. The control of the rotation of roller 11 caused by spring 12 is by means of pendulum 13 which operates through cam 14. In co-operation with teeth 16 on shaft 17 of roller 11 the teeth 16 bearing on the cam surface 18 of cam 14 alternately swing the pendulum 13 back and forth, and as the teeth 16 ride on the cam surface 18 and off the end thereof, roller 11 moves until the pendulum 13 swings to engage the cam surface 18 with the opposite tooth causing an intermittent motion of roller 11. A stop-arm 20 contains a lug 21 to engage a ratchet 22 to prevent rotation of the roller 11 when the stop-shaft 20′ is pulled out. The stop-shaft 20′ at the same time disengages the pendulum cam 14 from the teeth 16.

The operation of the device is as follows:

Curtain 6 is raised and music roll 10 is inserted on shaft 22′ within box 1. A clip on the edge of the paper roll is secured to spring roller 11. The weight 23 on pendulum 13 is adjusted by means of set screw 24 on pendulum rod 25 at the required tempo as indicated by markings on the rod. The curtain 6 is then pulled down. Upon the insertion of stop-shaft 20′ the mechanism commences operation and a note or a series of notes appear in the openings 7′ of curtain 6 above and adjacent the note or notes to be played. Upon

the swinging of pendulum 13 roller 10 is caused to be unwound and additional note or notes appear in the openings 7′ at the proper time. It will thus be noted that the pupil by association has had indicated to him the key that the note represents and its proper time value as the notes appear and disappear at the openings provided in such rhythm. When roller 10 becomes entirely unwound, stop-shaft 20 is withdrawn and roller 10 is rewound by means of crank 24′, which rewinding causes the rotation of roller 11 and the winding up of the spiral spring 12. In the event of spiral spring 12 accidentally becoming unwound, it may be rewound by crank 24′ being transferred to shaft 17 of roller 11.

Although I have shown a piano instruction device separable from a piano, yet it may be built into a piano as an integral part thereof.

It will thus be seen that I have invented a device whereby it is possible to teach the association of the great staff with the keyboard, the coordination of notes and keys, the notation of music, time, rhythm and tempo, the natural and free use of the hands and fingers, the theory of music, the absolute pitch and as an incident, harmony, melody, building and composing.

What I claim is:

1. A musical instruction device comprising a container positioned above the keys of a piano, a representation of the great staff on the face of said container, a roller bearing a roll having musical notes thereon, openings at the bottom of the great staff, said openings corresponding to the space of the great staff, means for supporting said roller in said container, means for actuating said roller to bring at predetermined intervals said notes on said roll in position in said openings, and means for effecting the appearance of each note in the opening corresponding to the notes positioned on the great staff.

2. A musical instruction device comprising a container positioned above the keys of a piano, a representation of the great staff on the base of said container, an actuating roller in said container, means for intermittently rotating said actuating roller at a predetermined number of revolutions per minute, a roller bearing a roll having musical notes thereon, openings at the bottom of the great staff adjacent the keys, said openings corresponding to the spacing of the great staff, means for securing said roll to said actuating roller, said notes positioned on said roll to appear in the openings corresponding to their position on the great staff.

3. A musical instruction device comprising a container positioned adjacent the keys of a piano, an opening in the face of said container, a roller in said container above and behind said openings, means for supporting said roller in said casing, a curtain on said roller, said curtain bearing the representation of the great staff thereon, openings in said curtain corresponding to the spacings of the great staff adjacent the free end of the curtain, an actuating roller supported in said container, means for intermittently rotating said actuating roller at a predetermined number of revolutions per minute, means for changing the number of revolutions per minute of said means for intermittently rotating said actuating roller, a roller bearing a roll having musical notes thereon, means for securing said roll to said actuating roller, means whereby the notes on said roll appear in the openings corresponding to said notes positions on the great staff as the same are caused to appear in said openings by said actuating roller.

4. A musical instruction device comprising a container positioned adjacent the keys of a piano, an opening in the face of said container, a roller in said container above and behind said openings, means for supporting said roller in said casing, a curtain on said roller, said curtain bearing the representation of the great staff thereon, openings in said curtain corresponding to the spacings of the great staff adjacent the free end of the curtain, an actuating roller supported in said container, a spring to rotate said actuating roller, a ratchet for said actuating roller and spring, double sprocket carried by said actuating roller, a pendulum cam supported in said container and adapted to vibrate between said sprockets to intermittently release said actuating roller to permit of intermittent rotation thereof, means for controlling the period of vibration of said pendulum cam, means for disengaging said pendulum cam and engaging said ratchet to permit of winding of said spring, an opening in said container to permit of adjustment of said pendulum cam, a roller bearing a roll having musical notes thereon, means for securing said roll to said actuating roller, said notes adapted to appear in the openings in said curtain corresponding to their positions on the great staff.

5. A musical instruction device comprising a container positioned adjacent the keys of a piano, an opening in the face of said container, a roller in said container above and behind said openings, means for supporting said roller in said casing, a curtain on said roller, said curtain bearing the representation of the great staff thereon, openings in said curtain corresponding to the spacings of the great staff adjacent the free end of the curtain, an actuating roller supported in said container, a spring to rotate said actuating roller, a ratchet for said actuating roller and spring, double sprocket carried by said actuating roller, a pendulum cam supported in said container and adapted to vibrate between said sprockets to intermit-

tently release said actuating roller to permit of intermittent rotation thereof, means for controlling the period of vibration of said pendulum cam, means for disengaging said pendulum cam and engaging said ratchet to permit of winding of said spring, an opening in said container to permit of adjustment of said pendulum cam, a roller bearing a roll having musical notes thereon, means for releasably securing said roll to said actuating roller, said notes adapted to appear in the openings in said curtain corresponding to their positions on the great staff, and means for rewinding said roller bearing said roll having musical notes thereon.

ADDYE YEARGAIN HALL.