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J. SCHWERTNER.

CONTROLLING APPARATUS FOR AUTOMATIC PIANOS AND THE LIKE.

APPLICATION FILED APR. 29, 1911.

1,060,031.

Patented Apr. 29, 1913.

4 SHEETS-SHEET 1.

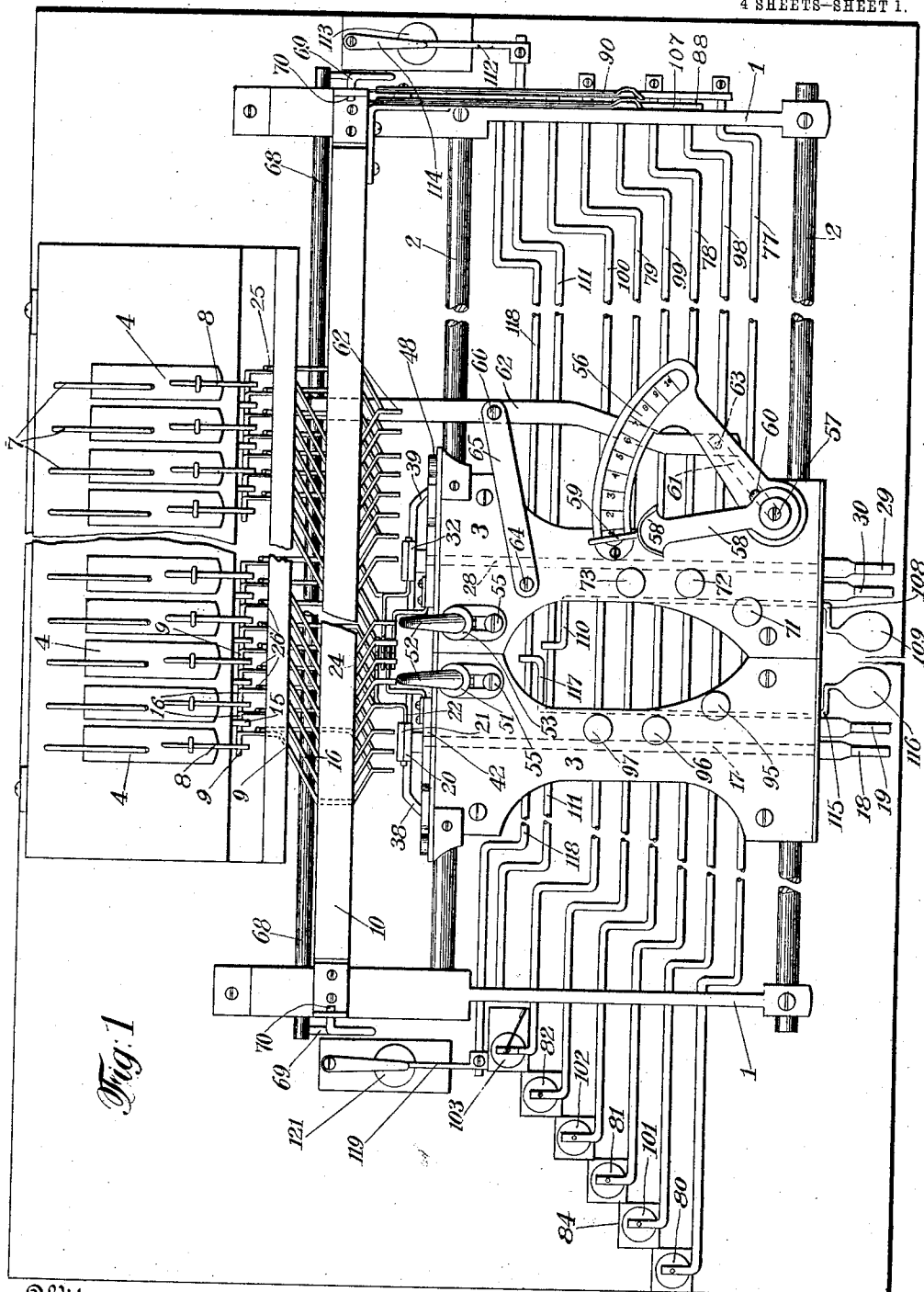


Fig. 1

Witnesses:

*Edmund
L.O. Gumpel*

Inventor

Joseph Schwertner
By *Attorneys*
Kempson Kempson

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4 SHEETS—SHEET 2.

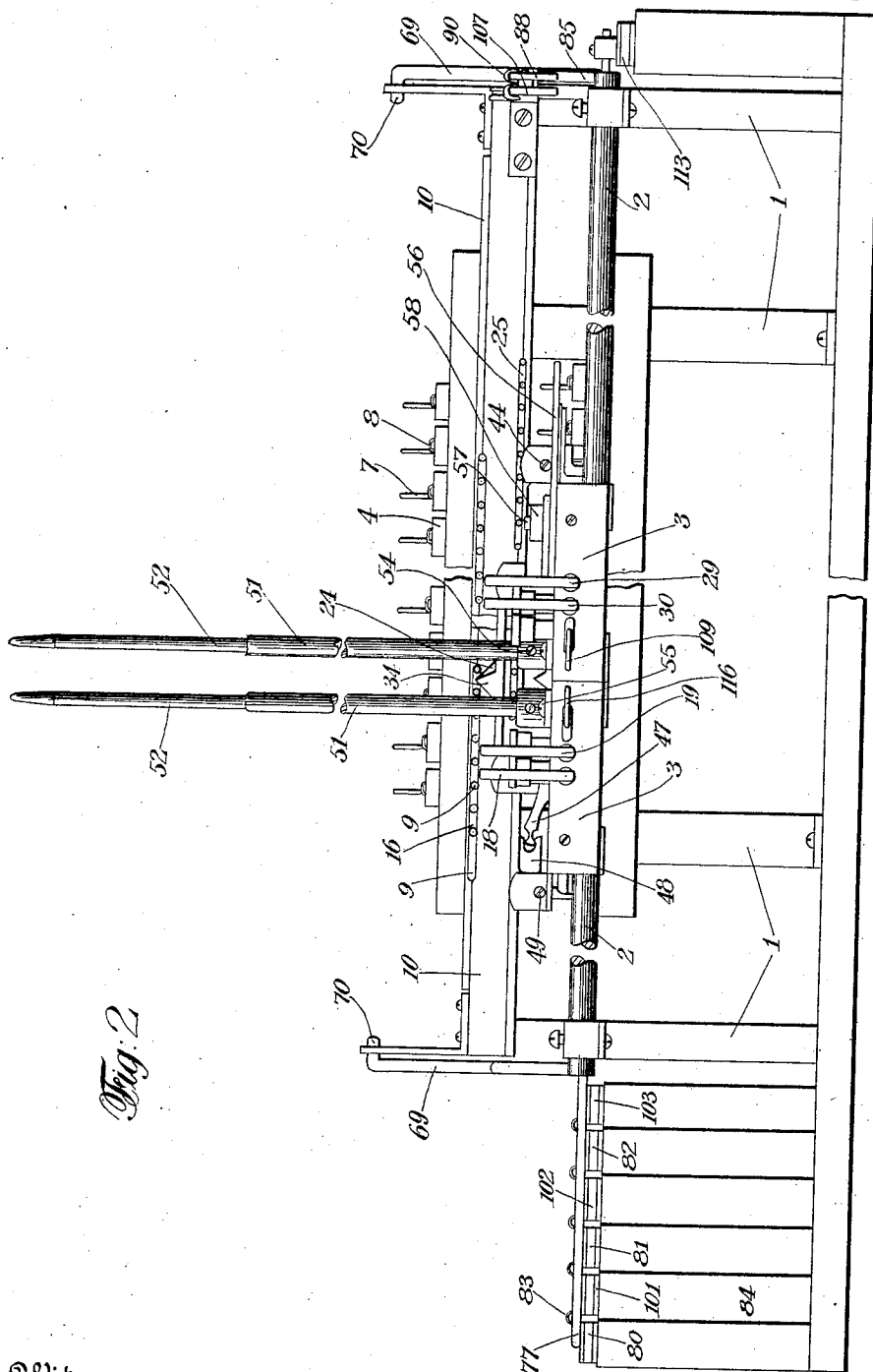


Fig. 2

Witnesses:
Edmund Harris
J. O. Gumpel

Inventor
Joseph Schwertner
 By his Attorneys
Kenyon & Kenyon

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4 SHEETS—SHEET 3.

Fig:3

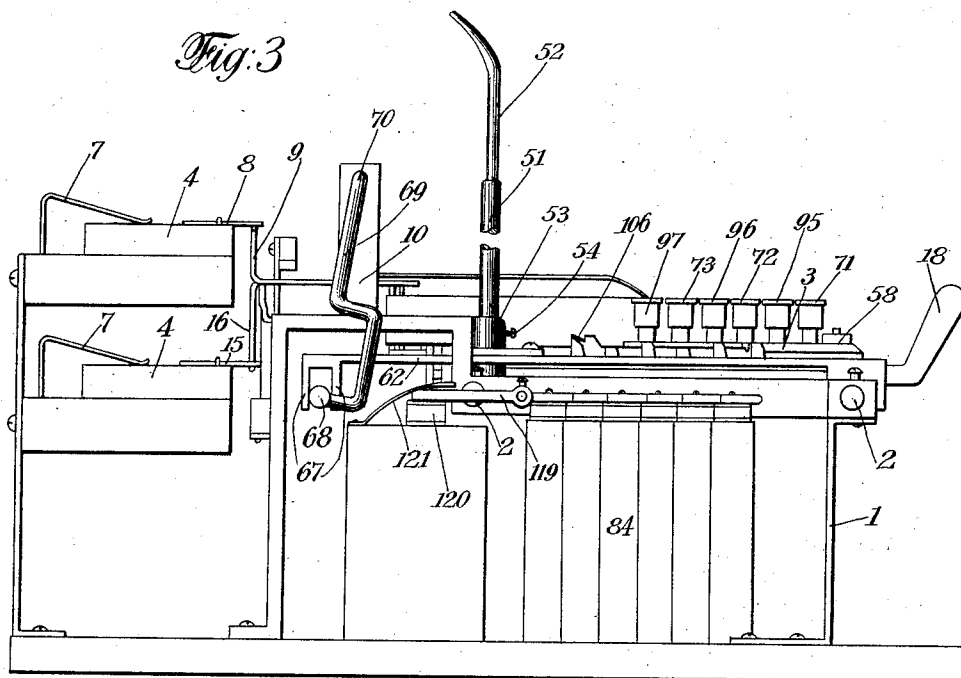
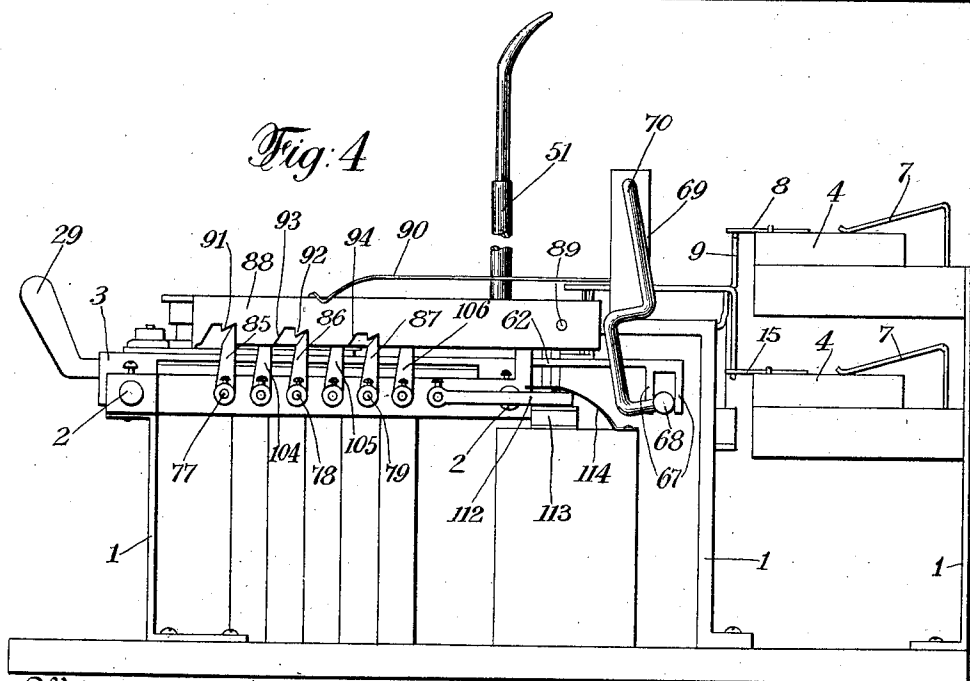


Fig: 4



Witnesses:

Gedms Harris.
J. O. Kemper

Inventor

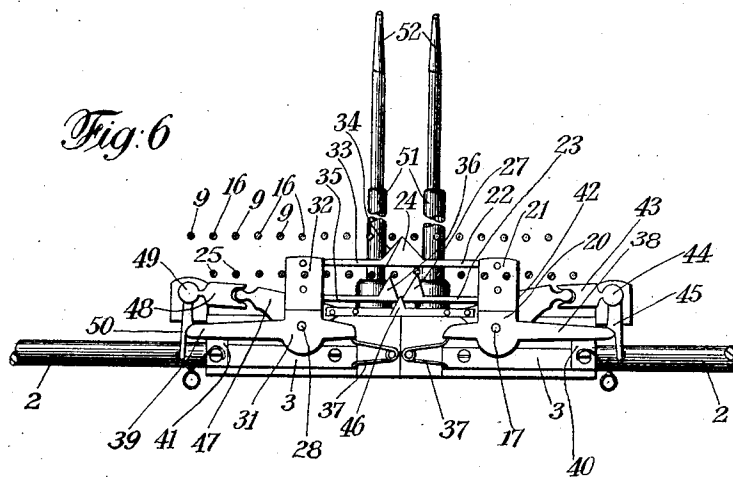
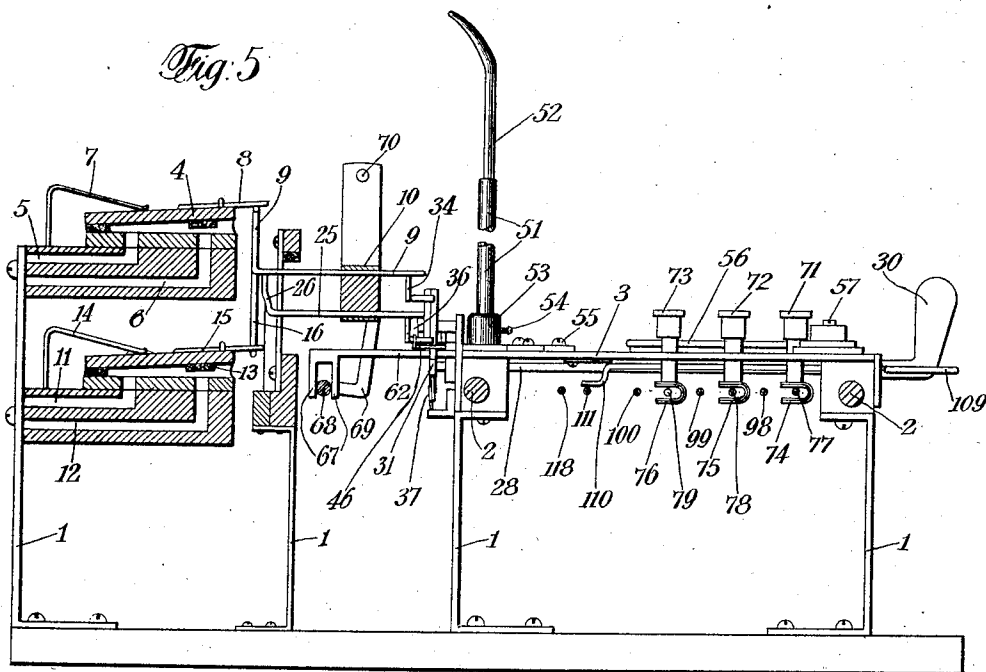
Inventor
Joseph Schwertner
By his Attorneys
Kernson & Kernson

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4 SHEETS—SHEET 4.



Witnesses:
Edmanis.
J. O. Gumpel

Inventor
Joseph Schwertner
By *his Attorneys*
Kempson & Kempson

UNITED STATES PATENT OFFICE.

JOSEPH SCHWERTNER, OF NEW YORK, N. Y., ASSIGNOR, BY DIRECT AND MESNE ASSIGNMENTS, TO HEERWAGEN COMPANY, A CORPORATION OF NEW YORK.

CONTROLLING APPARATUS FOR AUTOMATIC PIANOS AND THE LIKE.

1,060,031.

Specification of Letters Patent.

Patented Apr. 29, 1913.

Application filed April 29, 1911. Serial No. 624,038.

To all whom it may concern:

Be it known that I, JOSEPH SCHWERTNER, a citizen of the United States, and a resident of New York, county of New York, and State of New York, have invented certain new and useful Improvements in Controlling Apparatus for Automatic Pianos and the Like, of which the following is a specification.

My invention relates to improvements in controlling apparatus for automatic pianos, organs and the like.

One object of my invention is to so arrange the parts of the various manual control devices, that they will cooperate with one another in a manner so that they may be more readily and conveniently controlled or operated by the hand of the operator.

A further object of my invention is to combine with the above, two relatively movable carriages for selecting various notes on the instrument, to be accented.

Further objects, features and advantages will more clearly appear in the detailed description given below, taken in connection with the accompanying drawings, which form a part of this specification.

Referring to the drawings, Figure 1 is a plan view of the parts of an improved arrangement embodying my invention in one form. Fig. 2 is a front elevation of the same. Fig. 3 is an end elevation of the same. Fig. 4 is an end elevation of the same looking at the opposite end. Fig. 5 is a transverse vertical section. Fig. 6 is a detail showing certain parts in longitudinal vertical section.

Referring to the drawings, 1 represents suitable frame work for supporting the various parts of the apparatus; 2 represents two round rods fixed to the frame work shown, which rods serve as tracks or guide ways for the movable carriages 3 3. The two movable carriages 3 3 are slidably mounted upon the rods 2 2 so that they are both movable and movable with respect to one another, both sliding in the same horizontal plane upon the rods 2 2; 4, 4, &c., represent a bank of valves adapted to open and close connection between wind ducts 5 and 6, there being a wind duct 5 and 6 for each valve. (See Fig. 5.) The valves 4 are normally held closed by springs 7, and each valve 4 is provided with a rigid wire 8, extending from the front thereof.

9 9, &c., represent alternate members of a bank of lever members. These lever members 9 9, &c., are formed of pieces of wire bent, as shown in Figs. 1 and 5. These lever members 9 are fulcrumed by passing through suitable holes or apertures in a fulcrum member 10.

Upon rocking the lever members 9 the upper arms thereof, engage the wire extensions 8 to lift the same, thus lifting the valve 4, in order to put the ducts 5 and 6 into pneumatic communication with one another. In a similar manner a lower bank of wind ducts 11 and 12, are provided with valves 13 for opening or closing communication therebetween. The valves 13 are provided with springs 14 for normally closing the same, and with wire extensions 15, extending from the front thereof. Engaging the underneath side of the wire extensions 15, are the downwardly extending ends of wire lever members 16. The wire lever members 16 are also fulcrumed in the support 10, in the same horizontal plane in which the lever members 9 are fulcrumed, and alternately therewith. The outer or forward arms of the lever members 9 and 16 lie in the same normal plane, and are of the same shape. With respect to the inner or rear arms of these wire lever members, however, the inner ends of the members 16 extend downwardly, while the inner ends of the members 9 extend upwardly, so that each may engage its respective bank of valves. Upon rocking the lever members 16, by throwing their front arms upwardly, the inner arms are thrown upwardly, thus raising the extensions 15, and accordingly raising the valves 13, and placing the ducts 11 and 12 into pneumatic communication with one another.

The wind ducts 5, 6, 11 and 12 lead to suitable devices whereby, for instance, when the wind duct 5 is coupled with the wind duct 6, a note corresponding thereto will be accented. In a similar manner, when the wind duct 11 is coupled with the wind duct 12, a note corresponding thereto will be accented. Thus there is provided a valve 4, or 13, corresponding to each note or each predetermined number of notes of the instrument, and any suitable means may be provided for causing any note or set of notes to be accented merely by raising the corresponding valve closure 4 or 16, as the case may be.

However, I prefer to use an apparatus such as is specified in one of my former applications, Serial No. 535,585, or Serial Number 614,593.

5 Journaled in the lefthand carriage 3, is a rod or shaft 17, which has secured to its outer end a handle 18. Coöperating with the handle 18 is a handle 19 rigid with carriage 3, so that by placing the thumb against the handle 19, and one finger against the handle 18, the two may be forced together by moving the handle 18, thereby rocking the shaft 17.

15 Secured to the inner end of shaft 17 is a member 20. The member 20 has an upright portion 21, which upright portion has secured thereto, arms 22 and 23. (See Fig. 6.) The arm 22 carries a cam 24, the face of which is arranged to engage the forward arms of the wire lever members 9, 16, &c., for the purpose of raising the same, to raise the corresponding valve closures 4 and 13. Thus if the left hand carriage 3 (right hand carriage in Fig. 6) is moved to the right in Fig. 6, it will raise the inner arms of the wire lever members 9, 16, &c., to open the corresponding valves 4, 13, &c. Also fulcrumed in the support 10, and directly below the lever members 9, 16, &c., is a set of lever or locking members 25, provided with upwardly extending portions 26 (see Figs. 5 and 6). When the wire locking members 25 are rocked, the inner arms 26 are arranged to come underneath the inner arms of the wire lever members 9, 16, &c. (See Fig. 1.) This action takes place because as the inner arms of the wire lever members 9, 16, &c., are raised above the tops of the arms 26, the forward ends of the lever members 25 drop by gravity, thus swinging the tops of the arms 26 below the inner ends of the arms 9, 16, &c., so as to hold the latter up, or lock them in their upper position, so as to lock the corresponding valves 4, 13, &c., in open position.

When (in Fig. 6) the right hand carriage 3 is moved to the left, the cam face 24 passes beneath the front arms of the levers 9, 16, &c., and raises them, if they were not before raised, and held in locked position, as just described. However, in the movement of the carriage 3 to the left (as in Fig. 6), a cam 27 secured to the arm 23 raises the forward arms of the levers 25. The cam 27 is placed just behind the cam 24, so that as the cam 24 leaves a certain lever member 9 or 16, the cam 27 will immediately afterward, raise the corresponding lever member 25, to unlock the same, thus allowing the corresponding lever member 9 or 16, to drop to its original position, thereby closing the corresponding valve 4 or 16. However, when the carriage 3 is moved to the right (in Fig. 6), the unlocking cam 27 engages the members 25 before the operating cam 24

engages the corresponding members 9, 16, &c. Therefore, when the carriage 3 is moved to the right, in Fig. 6, it will raise the valves 4, 13, &c., and these will be locked in open position by the action of the locking levers 25, and 26. When moving in this direction the cam 27 does not act to unlock, since it acts ahead of the cam 24, and in that position has nothing to unlock. In a similar manner the right hand carriage 3 (in Fig. 1) has journaled therein, a rocking shaft 28, provided on its forward end with a rigid handle 29, which coöperates with a handle 30, fixed to the carriage 3. Secured to the inner end of the shaft 28 is a member 31, similar to the member 20, which member 31 has an upwardly extending arm 32, as is more clearly shown in Figs. 5 and 6.

The arm 32 has secured thereto a horizontal arm 33, corresponding to the arm 22, which arm 33 carries at its end a cam 34 having a cam face which acts the same as the cam 24 upon the wire lever members 9, 16 &c. The arm 32 also carries the arm 35, which has secured to its end a cam face 36 designed to act upon the locking and unlocking lever members 25, to unlock the lever members 9, 16 &c., when it is moved to the left (in Fig. 6). Springs 37 normally act upon the members 20 and 31, so as to hold the various cams 24, 34, 27 and 36, in their uppermost positions. This movement is limited by arms 38 and 39 on the members 20 and 21 respectively, engaging stops 40 and 41, respectively. When it is desired to move the carriages 3 one direction or the other, without raising any of the valves, 4, 13, &c., it is only necessary to rock the shafts 17 and 28, by moving the handles 18 and 29, thereby rocking the members 20 and 31 in a direction to move the cam faces 24, 34, 27 and 36 downwardly so that they no longer engage the forward arms of the wire lever members 9, 16, &c., and 25, in their horizontal sliding movement.

Loosely mounted upon the shaft 17 at its inner end, is a rocking member 42. One end of the rocking member 42 is engaged by one end of a bell-crank lever 43, pivoted at 44, the other end of the bell-crank lever carrying a cam face at 45, engaged by the arm 38. The other end of the lever 42 carries a cam face 46, as clearly shown in Fig. 6, so that when the rocking shaft 17 is rocked by movement of the handle 18, the cams 24 and 27 move downwardly while the arm 38 moves upwardly. The upward movement of the arm 38 causes it, by engagement with the cam face 45, to rock the bell-crank lever 43, which in turn rocks the lever 42 about the shaft 17. This causes an upward movement of the cam face 46, so that it will engage one of the wire lever members 25, directly above, in order to unlock the corresponding wire lever member 9, or 16, as the

case may be, if such happens to be in a locked position. In a similar manner there is journaled about the shaft 28, a lever member 47, one end of which is engaged by a bell-crank lever 48, pivoted at 49, the bell-crank lever carrying a cam face at 50, engaged by the end of the arm 39. The other end of the lever 47 carries a cam face similar to 46, which operates in substantially the same manner. It will thus be seen that when the handles 18 and 29 are in their normal position, and the carriages 3 3 are separated, all valves 4, 13, &c., corresponding to wire lever members 9, 16, &c., between the cams 24 and 34, will be opened and locked open, by means of the locking members 25 and 26, falling by gravity beneath. If, however, the carriages 3 3 are moved toward one another, the cams 27 and 36 will engage the lever members 25, to unlock the lever members 9, 16, &c., as they move by the same. In this manner any note or set of notes corresponding to lever members, between the cams of the carriages 3 3 may be accented, as desired. If, however, it is desired to move the carriages without opening the valves 4, 13, &c., it is only necessary to move the handles 18 and 29, when the carriages may be moved without in any manner affecting the lever members 9, 16, &c., and the valves 14, 13, &c. If it is desired to accent one note at some distance from the main body or set of notes being accented, either one of the carriages may be used for this purpose. To do this it is only necessary to take one carriage, say the right hand carriage in Fig. 1, and move the lever member 29, so that the carriage can be moved to the right (or left) without affecting the accenting valves. When the proper note is reached, the handle 29 is allowed to assume its normal position by means of spring 37, when the cam 24 will engage the proper lever member 9, or 16, as the case may be, to operate the corresponding accenting valve. When it is again desired to close this corresponding accenting valve, it is only necessary to press the handle 29, when the cam 24 is withdrawn. This, however, does not unlock the corresponding member 9 or 16, which has just been operated, but in pressing the handle 29 and rocking the shaft 28, to withdraw the cam 24, the cam 46 is raised, which engages the corresponding locking lever 25, and raises its forward arm so as to unlock the corresponding lever 9 or 16. The left hand carriage 3 (in Fig. 1), may be moved and operated in a similar manner to accent a note, as desired. Thus either of the carriages may be moved without affecting any of the accenting valves, and may pick out any one of the accented valves at any portion of the instrument, to operate the same, and then as soon as desired, release the same, when the carriage may be moved

back to its original position where it may control the accenting of other notes or sets of notes.

For the purpose of indicating the notes accented, each carriage 3 is provided with an upright post 51, which is hollow, and in the upper end of which is adjustably inserted a pointer 52, which indicates on the tracker sheet, the notes being accented. The upright members 51 are secured to base pieces 53 by means of set screws 54, and the base pieces 53 are adjustably mounted upon the carriages 3 3, by means of screws 55.

In order that the tempo of the apparatus may be conveniently and readily regulated by the hand of the operator, and especially by the right hand of the operator, which operates the right hand carriage in Fig. 1, I secure to the right hand carriage 3, in Fig. 1, a scale 56. Pivotaly mounted on the right hand carriage 3, in Fig. 1, at 57, is a movable arm 58, carrying a pointer 59, which coöperates with the scale 56, to indicate the tempo at which the instrument operates. The member 58 is rigidly secured to its pivot pin 57, by means of a screw 60, and below the carriage 3, the pivot pin 57 has rigidly secured thereto, an arm 61. The arm 61 is pivoted to an arm 62, at 63. Pivotaly connected to the right hand carriage 3, at 64, is a link 65, and the other end of the link 65 is pivotaly connected to the member 62, at 66. At its innermost end the arm or member 62 has downward projections 67, forming a forked member which slidably engages a rod 68. The rod 68 is carried at either end by two arms 69, which are pivotaly mounted to the frame at 70. The rod 68 is connected in any suitable manner to operate any suitable and well-known tempo regulating mechanism. Since such mechanisms are well known by those skilled in the art, it is unnecessary to give a further description of them. One of the fingers of the right hand of the operator is inserted in the finger piece 58' to move the tempo arm 58. It will therefore be seen that by moving the tempo indicating arm 58 over the scale 56, the arm 61 which is rigid with the arm 58, moves correspondingly and this in turn moves the arm 62, which in turn, by engagement of its forked member with the rod 68, moves the rod 68, to adjust the tempo of the instrument as desired. However, the carriages 3 3, and especially the right hand carriage 3, in Fig. 1, may be moved as much as desired, but such movement being constrained to a horizontal sliding movement, does not in any way affect or move the rod 68, but the rod 68 is only moved by a movement of the tempo indicator and regulator 58.

In order that suitable and convenient means may be provided for varying the volume of the notes accented or the strength

of the accompaniment notes, I provide on the right hand carriage 3, in Fig. 1, a series of press buttons 71, 72 and 73. The press buttons 71, 72 and 73, each have rods extending through the carriage 3, and have bent-over engaging members 74, 75 and 76, secured on their bottoms. These bent-over engaging members 74, 75 and 76, engage rods 77, 78 and 79, respectively, and slide horizontally on said rods, which rods are pivotally mounted in the frame, so as to act as lever members.

Referring to Fig. 1, there is secured to the left hand end of the rod 77, 78 and 79, valve closures 80, 81 and 82, which when normally pressed downward by springs 83, close wind ducts thereunder in the blocks 84. Thus by pressing down the push button 71, at any position of the carriage 3, the valve closure 80 is raised and this may be made to operate to throw, say, the highest pressure or suction desired, into the operating pneumatics of the instrument. This may be accomplished in any well-known manner. And furthermore, the throwing on of such high pressure may be limited to those particular notes which it is desired to accent. In a similar manner, by pushing down the button 72, the valve closure 81 may be raised to throw a medium pressure or suction into the operating pneumatics, corresponding to the notes to be accented, and if button 73 is pushed, valve closure 82 may be raised to cause a relatively low wind pressure or suction to be thrown into the operating pneumatics of notes to be accented. In order that any one of the valve closures 80, 81 or 82, may be automatically closed when any other one is opened, the rods 77, 78 and 79, are provided on the other ends thereof, and rigidly secured thereto, with arms 85, 86 and 87 respectively. These arms 85, 86 and 87 are provided on their upper ends, with cam faces which engage cooperating cam faces on the under side of a member 88, pivotally mounted at 89, and normally forced downward by a spring 90 (see especially Fig. 4). Therefore, when the button 71 is pressed downwardly it carries down with it the front arm of the wire lever member 77, at the same time rocking forward the arm 85. When the arm 85 passes beyond the projection 91, it becomes locked therebehind, thereby locking the valve closure 80 in its uppermost or open position. Now if it is desired to throw on a different pressure, say medium pressure, into the notes accented, the button 72 is pressed, thereby rocking the member 86, which not only passes beyond the locking projection 92, but also engages the cam face 93, thereby raising the arm 88 sufficient to allow the arm 85 to pass beneath the projection 91, and return to its normal position under the action of its spring 83. In a

similar manner, if it is desired to throw on a low pressure, the button 73 is pushed, thereby rocking the arm 87 until it engages the cam face 94, when it will push the arm 85 farther upward sufficient to release either of the arms 85 or 86, which may have been locked behind the projections 91 or 92.

From the above it will be apparent that when any one pressure is thrown into operation any previous pressure which has been in operation will be discontinued automatically. By the above, one may provide as many pressures as desired, and yet each pressure will be discontinued upon the throwing in of a different pressure. In a similar manner the left hand carriage 3, in Fig. 1, is provided with three push buttons 95, 96 and 97, which in a similar manner, operates upon lever rods 98, 99 and 100. The left hand end of the lever rods 98, 99 and 100, all carry at their right hand ends (in Fig. 1), valve closures 101, 102 and 103, which operate in the same manner as the valve closures 80, 81 and 82, except that they operate to throw varying pressures in the operating pneumatics, which play the accompaniment notes on the instrument. Therefore, by means of the buttons 95, 96 and 97, any one of three, different pressures may be thrown into the operating pneumatics of the accompaniment notes so that the strength or volume of the accompaniment may be varied as desired. The rods 98, 99 and 100, have secured to their other ends members 104, 105 and 106, which cooperate with cam faces in a pivotally mounted cam member 107 (see Fig. 1), which cam member operates similar to the member 88.

In order to operate the loud and soft pedals of the instrument, in a convenient manner, I provide, journaled in the right hand carriage 3, in Fig. 1, a rocking member 108. At its front end the rocking member 108 carries a flat portion off center, so that a suitable lever arm 109 is provided, whereby the thumb of the operator may engage the same to push it downwardly. At its other end the rod 108 carries a lever arm 110 which engages a wire lever member 111, at any point thereupon. The wire lever member 111 is suitably journaled in the frame, and carries at its end, in Fig. 1, an arm 112 which carries at its end a valve closure 115, normally held downward by means of a spring 114. The valve closure 113 is adapted to normally close a wind passage, upon the opening of which any suitable apparatus may be set in motion, to actuate the loud pedal mechanism of the instrument. The wire lever member 111 is so constructed, as will be apparent from Fig. 1, that the right hand carriage 3 may slide to any position, and yet upon pressing downward the arm 109, the arm 110 will likewise be pressed downward, and will engage the

lever member 111, pushing its forward arm downwardly, thereby raising the valve closure 113, to throw into operation the loud pedal mechanism. In a similar manner there is journaled on the left hand carriage 3, in Fig. 1, a rocking rod 115, which carries at its forward end a flat portion 116, acting as one arm of a lever. At its other end the rod 115 carries an arm 117 adapted to engage the forward arm of a wire lever member 118, which is journaled in the main frame, and carries at one of its ends, an arm 119, which carries at its end a valve closure 120, normally held down by a spring 121. Therefore, upon pushing downwardly upon the flat portion of the arm 116, the arm 117 is likewise forced downwardly, and in whatever position the left hand carriage 3 may be, this action will force downwardly the front arm of the wire lever member 118, thereby raising the valve closure 120, which throws into action the soft pedal mechanism in any well-known manner.

From the above it will appear that one important feature of my invention is the provision of two relatively movable carriages or members which select the notes to be accented. In using such an apparatus which is adapted to select any note or set of notes, or especially a plurality of sets of notes to be accented, at will, it must be seen that it may be most desirable to keep the carriages 3 in continual movement. This is all the more so, in connection with carriages which select notes to be accented, since these notes are continually changing, while if the carriages only varied the expression by changing the volume of sound, their activity would not need to be so great. Therefore with such carriages which select the notes to be accented it is especially important that means be provided upon these carriages, for controlling all of the other functions of the instrument, which are desirable to be controlled manually. It will therefore be seen that by providing a tempo regulator 56, 58 and 59, so that it is carried by one of these carriages, and by providing the buttons 71, 72 and 73, 95, 96 and 97, and the members 109 and 116, not only may the tempo be controlled by the hands of the operator without taking them off of the movable accent controlling carriages, but also the expression or volume, or strength of the accented notes, and independently of the accompaniment notes, may be varied as desired, without removing the hands from the carriages, and also the loud and soft pedal movement may be similarly controlled without removing the hand from the carriages, so that the carriages may be kept in continual motion, while any one or more of the other devices carried thereby are operated simultaneously.

Although I have described my improvements in great detail, and with respect to

one particular embodiment of my invention, I do not desire to be limited by such details, except as clearly pointed out in the appended claims, since many changes and modifications may well be made without departing from the spirit and scope of my invention in its broadest aspects.

However, having fully and clearly described my invention, what I claim as new, and desire to secure by Letters Patent, is:

1. In an automatic piano with its loud and soft pedals, two members sliding independently of one another, means whereby the movement of said members may select various notes to be accented, a third member pivotally mounted to one of said first mentioned members, means whereby movement of the third member about its pivot regulates the tempo of the apparatus, hand operated means carried by one of said first mentioned members for varying the degree of accented, hand operated means carried by the other of said first two mentioned members for varying the strength of the accompaniment, means carried by one of said first mentioned two members for controlling the actuating of the loud pedal mechanism, and means carried by the other of said first two mentioned members for controlling the actuating of the soft pedal mechanism.

2. In an automatic piano with its loud and soft pedals, two members sliding independently of one another, means whereby the movement of said members may select various notes to be accented, hand operated means carried by one of said first mentioned members for varying the degree of accented, hand operated means carried by the other of said first two mentioned members for varying the strength of the accompaniment, means carried by one of said first mentioned two members for controlling the actuating of the loud pedal mechanism, and means carried by the other of said first two mentioned members for controlling the actuating of the soft pedal mechanism.

3. In an automatic piano with its loud and soft pedals, two members sliding independently of one another, means whereby the movement of said members may select various notes to be accented, a third member pivotally mounted to one of said first mentioned members, means whereby movement of the third member about its pivot regulates the tempo of the apparatus, means carried by one of said first mentioned two members for controlling the actuating of the loud pedal mechanism and means carried by the other of said first two mentioned members for controlling the actuating of the soft pedal mechanism.

4. In a control apparatus for automatic pianos, organs and the like, provided with a tempo regulating means, two movably mounted carriages movable relatively to one

another, means whereby the movement of said carriages selects notes to be accented, a member mounted on one of said carriages and movable with respect thereto, and means whereby movement of said movable member with respect to its carriage, regulates the tempo of the instrument.

5. In a control apparatus for automatic pianos, organs and the like provided with tempo regulating means, a hand operated slidably mounted carriage, a hand operated member carried by said carriage and movable relatively to the carriage, and means whereby movement of said last mentioned member with respect to the carriage regulates the tempo of the instrument, and whereby the carriage and member as a whole may be moved without changing the tempo of the instrument.

6. In a control apparatus for automatic pianos, organs and the like provided with a tempo regulating means, two movably mounted carriages movable relatively to one another, means whereby the movement of said carriages selects notes to be accented, a member mounted on one of said carriages and movable with respect thereto, and means whereby movement of said movable member with respect to its carriage regulates the tempo of the piano or the like, and a scale carried by said carriage cooperating with said movable member to indicate the tempo.

7. In an apparatus of the class described, two carriages mounted to slide substantially horizontally, means whereby said carriages may be moved to select notes to be accented, a member pivotally mounted on one of said carriages, means whereby said last mentioned member may be operated to regulate the tempo of the apparatus, a scale carried by said last mentioned carriage and cooperating with said movable member, and a pointer carried by each carriage for indicating the notes accented.

8. In a control apparatus for automatic pianos, and the like, two movably mounted carriages movable with respect to one another, means whereby the movement of said carriages selects notes to be accented, and means carried by one of said carriages for controlling the strength of the accompaniment of the piano or the like.

9. In a control apparatus for automatic pianos and the like, two movably mounted carriages movable with respect to one another, means whereby the movement of said carriages selects notes to be accented, and means carried by one of said carriages for controlling the strength of the accented notes of the piano or the like.

10. In a control apparatus for automatic pianos and the like, two movably mounted carriages movable with respect to one another, means whereby the movement of said

carriages selects notes to be accented, and means carried by one of said carriages for controlling the strength of the accompaniment of the piano or the like, and means carried by the other carriage for controlling the strength of the accented notes.

11. In a control apparatus for automatic pianos and the like, two movably mounted carriages movable with respect to one another, means whereby the movement of said carriages selects notes to be accented, and hand operated means carried by said carriages for regulating the strength of the accompaniment and accented notes of the piano or the like.

12. In a control apparatus for automatic pianos and the like, two movably mounted carriages movable with respect to one another, means whereby the movement of said carriages selects notes to be accented, a plurality of hand operated members carried by one carriage, means whereby the operation of each of said members may cause the accented notes to be sounded with a different strength, a plurality of hand operated members carried by the other carriage, and means whereby the operation of each of said last mentioned members may cause the accompaniment notes to be sounded with a different strength.

13. In a control apparatus for automatic pianos and the like, with soft and loud pedal mechanism, two movable carriages movably mounted with respect to one another, means whereby the movement of said carriages selects notes to be accented, hand operated means carried by one of said carriages for controlling the loud pedal mechanism, and hand operated means carried by the other carriage for controlling the soft pedal mechanism.

14. In a control apparatus for automatic pianos and the like, with loud pedal mechanism, two movably mounted carriages movable with respect to one another, means whereby the movement of said carriages selects notes to be accented, and hand operated means carried by one of said carriages for controlling the loud pedal mechanism.

15. In a control apparatus for automatic pianos and the like, with soft pedal mechanism, two movably mounted carriages movable with respect to one another, means whereby the movement of said carriages selects notes to be accented, and hand operated means carried by one of said carriages for controlling the soft pedal mechanism.

16. In a control apparatus for automatic pianos and the like, means including a hand operated movably mounted member for selecting notes to be accented, and a hand operated tempo regulator carried by said movable member and thereby movable as a whole without changing the tempo of the instrument.

17. In a control apparatus for automatic pianos and the like, a hand operated movably mounted carriage for selecting notes to be accented, a member pivotally mounted on said movable carriage for controlling the tempo of the piano or the like, and a scale carried by said carriage and cooperating with said pivotally mounted member to indicate tempo.

18. In a control apparatus for automatic pianos and the like, a hand operated movable carriage for selecting notes to be accented, a member mounted on said movable carriage, for controlling the tempo of the piano or the like, and a scale carried by said carriage and cooperating with said member to indicate tempo.

19. In a control apparatus for automatic pianos and the like, a hand operated movable carriage for selecting notes to be accented, and means carried thereby for controlling the relative volume of sound between notes accented and those not accented.

20. In a control apparatus for automatic pianos and the like, a hand operated movable carriage for selecting notes to be accented, and means carried thereby for controlling the relative volume of sound between notes accented and those not accented, said means comprising a plurality of movable members on said carriage independent of one another.

21. In a control apparatus for automatic pianos and the like, a hand operated movable carriage for selecting notes to be accented, soft pedal mechanism and loud pedal mechanism for the apparatus; and hand operated means carried by said carriage for controlling one of said mechanisms.

22. In a control apparatus for automatic pianos and the like, soft and loud pedal mechanisms, a hand operated movably mounted carriage, a tempo control regulator carried by said carriage, and hand operated means carried by said carriage for controlling one of said mechanisms.

23. In a control apparatus for automatic pianos and the like, a hand operated movably mounted carriage, a member mounted on said movable carriage for controlling the tempo of the piano or the like, and a scale carried by said carriage and cooperating with said member to indicate tempo, and hand operated means carried by said carriage for controlling the volume of sound of certain notes played.

24. In a control apparatus for automatic pianos and the like, means for selecting at will notes to be accented, said means embracing two movably mounted hand operated carriages movable with respect to each other, and means for varying the degree of accenting, said last mentioned means embracing a plurality of movable members adjacent said carriages so that all of said

members and carriages may be conveniently controlled by the hands of the operator.

25. In a control apparatus for automatic pianos and the like, means for selecting at will notes to be accented, said means embracing two movably mounted hand operated carriages movable with respect to each other, and means for varying the degree of accenting, said last mentioned means embracing controlling means carried on one of said carriages whereby said controlling means and carriages may be conveniently controlled by the hands of the operator.

26. In a control apparatus for automatic pianos and the like, means for selecting at will notes to be accented, said means embracing two movably mounted hand operated carriages movable with respect to each other, and loud and soft pedal mechanisms, and hand operated members adjacent said carriages for controlling said mechanisms, so that all of said carriages and mechanisms may be conveniently operated by the hand of the operator.

27. In a control apparatus for automatic pianos and the like, means for selecting at will, notes to be accented, said means including two independently movably mounted members, each movable in a substantially horizontal line, and means for controlling the degree of accenting, said last mentioned means including a plurality of substantially horizontal rods movable up and down adjacent said movable members.

28. In a control apparatus for automatic pianos and the like, means for selecting at will, notes to be accented, said means including two independently movably mounted members, and means for controlling the degree of accenting, said last mentioned means including a plurality of substantially horizontal rods movable adjacent said movable members.

29. In a musical instrument, means for controlling the amount of accenting of various notes, said means including a plurality of hand operated members arranged horizontally, one for each degree of accenting and two hand operated horizontally movably mounted members adjacent said first mentioned members for selecting the notes to be accented.

30. In a control apparatus for automatic pianos and the like provided with a tempo regulating means, a suitable frame work in front of the operator, a carriage slidably mounted on said frame and slidable substantially horizontally in front of the operator, a member carried by said carriage and movable with respect thereto, and means whereby movement of said member with respect to said carriage, regulates the tempo of the instrument.

31. In a musical instrument, means for controlling the degree of accenting of vari-

ous notes, said means embracing three hand operated members, one for each degree of accenting, and two hand operated relatively movable members for selecting the notes to be accented, said last mentioned members being adjacent said first mentioned members so that all of said members may be conveniently controlled by the hands of the operator.

32. In a musical instrument, means for controlling the degree of accenting of various notes, said means embracing a plurality of hand operated members, one for each degree of accenting, and a hand operated movably mounted member for selecting the notes to be accented, said last mentioned member being adjacent said first mentioned members so that all of said members may be conveniently controlled by the hands of the operator.

33. In a musical instrument, means for selecting notes to be accented, said means embracing a hand operated movable member, means for varying the degree of accentuation of the notes accented, said controlling means embracing a plurality of hand operated members, one for each degree of accentuation, and means varying the degree of volume of the notes not accented, said last mentioned means embracing a plurality of hand operated members, one for each degree of volume, said hand operated members

being arranged adjacent one another so that they may all be conveniently controlled by the hands of the operator.

34. In a musical instrument, means for selecting notes to be accented, said means embracing two hand operated relatively movable members, means for varying the degree of accentuation of the notes accented, said controlling means embracing three hand operated members, one for each degree of accentuation, and means varying the degree of volume of the notes not accented, said last mentioned means embracing three hand operated members, one for each degree of volume, said hand operated members being arranged adjacent one another so that they may all be conveniently controlled by the hands of the operator.

35. In a player, three manually regulated means controlling tempo, expression and note accentuation, respectively, two of said means being carried on the movable portion of the third and regulated by movements with respect to the third and independent of the movement of the third.

In testimony whereof, I have signed my name to this specification, in the presence of two subscribing witnesses.

JOSEPH SCHWERTNER.

Witnesses:

GORHAM CROSBY,
EDWIN SEGER.