C. S. JASSEY.

MEANS FOR INTERPRETING PLAYER PIANO MUSIC.

APPLICATION FILED MAY 5, 1911.

1,067,254.

Patented July 15, 1913.

2 SHEETS—SHEET 1.

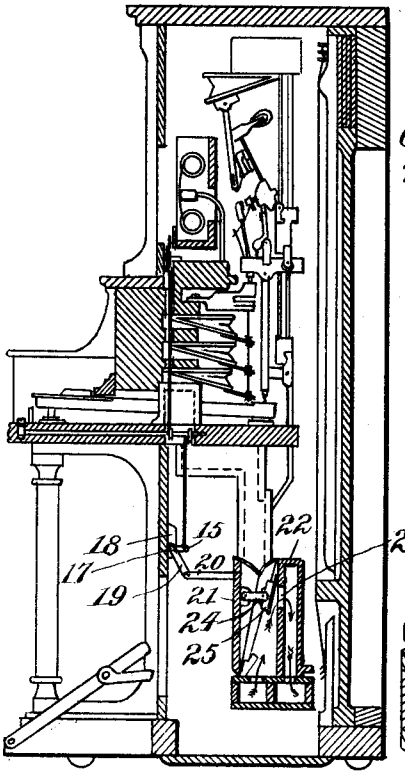


FIG. 1.

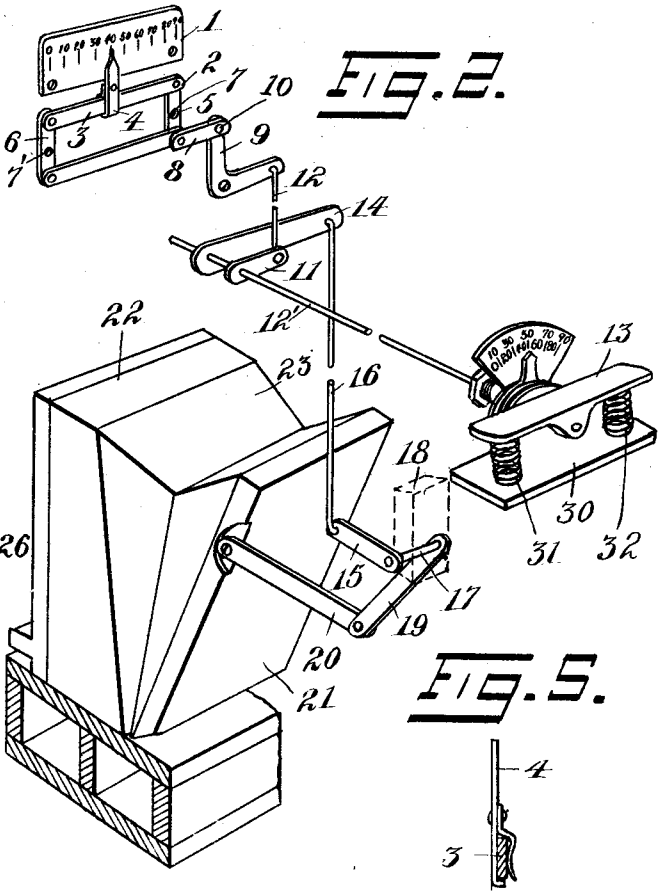


FIG. 2.

FIG. 5.

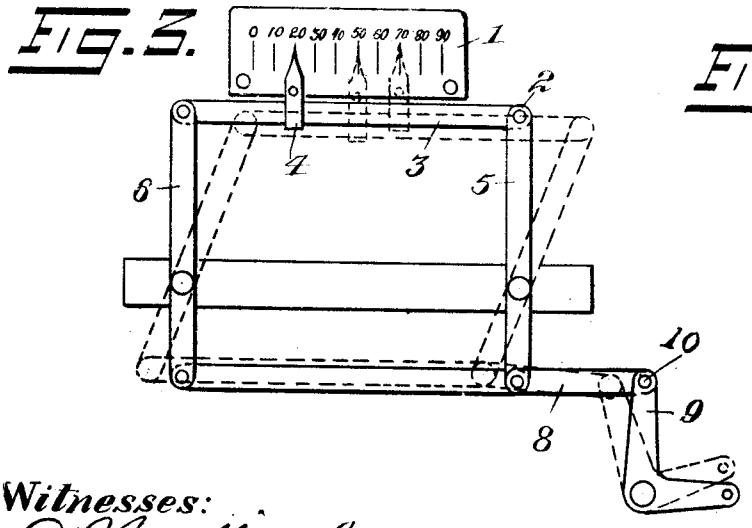


FIG. 3.

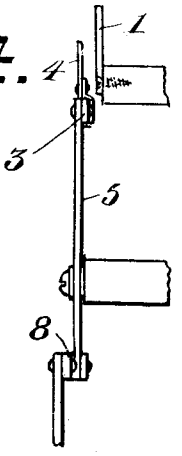


FIG. 4.

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2 SHEETS—SHEET 2.

Fig. 6.

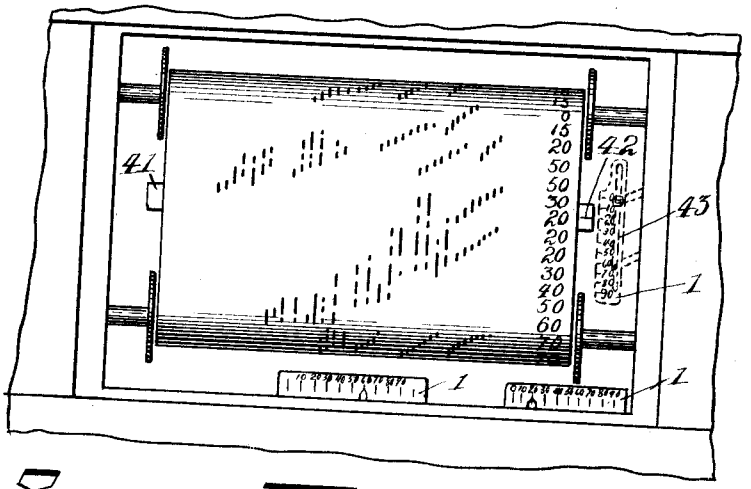


Fig. 8.

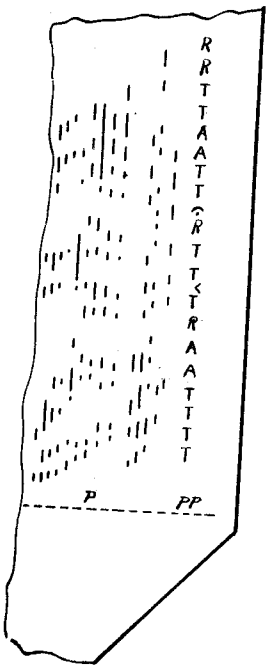


Fig. 7.

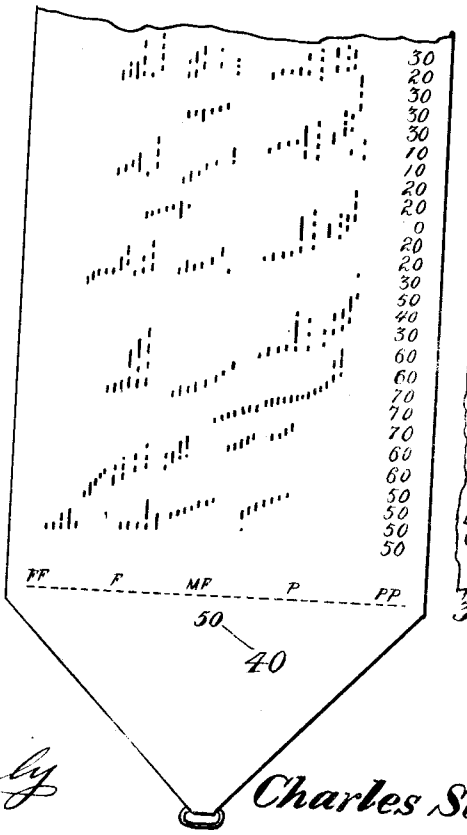


Fig. 9.

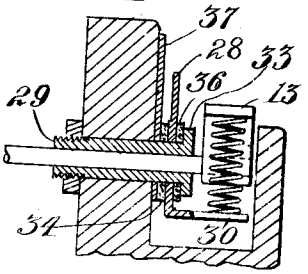
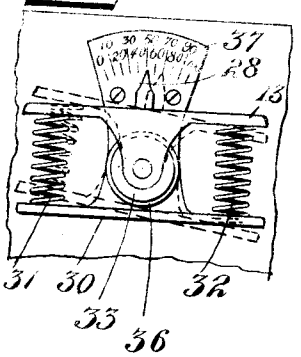


Fig. 10.



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UNITED STATES PATENT OFFICE.

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MEANS FOR INTERPRETING PLAYER-PIANO MUSIC.

1,067,254. Specification of Letters Patent. Patented July 15, 1913.

Application filed May 5, 1911. Serial No. 625,340.

To all whom it may concern:

Be it known that I, CHARLES SCHULTZ JASSEY, a citizen of the United States, residing in Edgewater, in the county of Bergen and State of New Jersey, have invented certain new and useful Improvements in Means for Interpreting Player-Piano Music, of which the following is a specification.

My invention relates to means for interpreting musical expressions by mechanical means in combination with special markings on perforated music rolls for player pianos, or the like, as written by the composer or arranger.

The variations of tempo and tone, the two contrasting elements of musical expression are infinite in their gradations and under the guidance of skilled composer or arranger these indications of fine variations may be so introduced upon the perforated music rolls that by the aid of my improvement, any novice will be enabled to perfectly reproduce the music with all the artistic nuances of tempo and tone, as originally written or arranged.

I am aware that so called phrasing levers and other devices of like nature have been developed from time to time; these devices permitting the operator to instil into any music controlled by him merely the principal changes of time and tone, as arranged by the composer. It is left to the operator to still further vary the tempo and tone (especially the time) as suggested by his own individual feeling, as to what changes would be effective and artistic. He is guided, in the main interpretation, by the general markings on the music roll, but it is permissible for him to modulate the same as he feels that it would prove effective in expressing his own ideas of interpretation. This, particularly, allows of individuality in the playing, but in the case of an operator not being capable of determining the amount of modulation by reason of a lack of taste or education, he has no means of determining the composer's desired degree of modulation, as under the present standards of markings the composer cannot convey it to him.

It is well known that every successive phrase in a musical composition must be produced in various shadings of time and tone. In the present standards adopted by music roll manufacturers, this shading is indicated in a general way only, the detailed shadings being left to an interpreter of more or less skill and ability.

A further object of my invention is the adaptability of my device for setting and maintaining a predetermined standard of speed, by which the tempo of the piece is mainly controlled. This speed may be adopted from the well known indications on a metronome oscillating bar or other like standard.

In the present standard player pianos or like devices the original tempo or time controlling the piece of music throughout is indicated at the beginning of the roll. The operator by setting his control or tempo lever brings the indicating mechanism to a time corresponding to that indicated on the beginning of the music roll. Upon commencing to play he then notes the various retard and accelerating marks and follows it throughout as best he can by moving the said tempo lever correspondingly, this action moving the indicator accordingly. If, however, he should release his hold or control of this lever during the remainder of the period in which he is operating the player, the tempo would be an entirely different one from that originally inscribed at the beginning of the piece. This condition arises from the fact that the modulations of tempo, indicated by the markings, would include any degree of retarding or accelerating that the performer might see fit to introduce.

In my device I set my tempo indicator at the tempo, as indicated by the indicated time signature, and then in operating my tempo control I only retard and accelerate from the original setting, and if for any reason, I desire to eliminate the tempo modulations, the original tempo as controlled by the indicator needle, which was set at the indicated time before commencing to play, would then be in control and would continue so until the finish, in the strict tempo indicated at the beginning of the piece.

In Fig. 8 is shown a reduced fragmentary section of a well known kind of music roll showing an accepted type of indications and which is the practice generally accepted by music roll manufacturers. It will be noted that the two upper indications R and R, signifying retard, are in a straight line with the next expression markings T and T which

signify a return to the original tempo controlling the piece, and below this in the same vertical line are the two characters A and A, which signifies "accelerate." These are all, as above noted, in a straight line and in the same relative characters there is nothing to indicate that the last R is of the same relative speed or of a greater or lesser speed. The same may be said of the characters indicating "accelerate" and "tempo." It will be seen from these markings that they simply indicate the general term of expression, the detail to be supplied by the understanding or spirit of the operator. These same terms or expression characters on other music rolls are utilized in a zig-zag or sinuous line running throughout the piece, this zig-zag or sinuous arrangement, however, having nothing to do with the degree of the graduation or shading of the expressions.

In the accompanying drawings Figure 1 is a sectional elevation of a player-piano showing my device attached thereto. Fig. 2 is an enlarged perspective view showing the component parts of my tempo controller. Fig. 3 is an enlarged view of the tempo setting needle and its mounting, showing the needle shifted to various positions along the dial. Fig. 4 is a side elevation of the same. Fig. 5 is an enlarged view of a portion of the indicator needle showing its method of sliding attachment to the upper bar. Fig. 6 is a fragmentary view of a player-piano showing the tracker-bar with a music roll in position, and showing the various positions in which my tempo indicator may be placed adjacent to the music roll. Fig. 7 is a fragmentary view of a length of the music roll showing one form of the markings or characters that I employ. Fig. 8 is a fragmentary view of a music roll showing the present method of marking expression. Fig. 9 is an enlarged sectional view of the finger tablet and tempo setting needle. Fig. 10 is a front view of the same.

In Fig. 2 is shown a tablet 1 which may be attached to any convenient place on the player-piano but preferably in or on the spool box, as shown in Fig. 6. A parallelogram 2, is composed of four links pivoted together at their outer corners, the upper link 3 having slidably arranged thereon an indicator needle 4, said needle being arranged to slide for the purpose of permitting the same to be moved or set to the tempo or time character, as indicated at the commencement of the music roll, indicated in Fig. 7, at 40. The two short links of the parallelogram 2, such as 5 and 6, have pivoting holes 7 and 7′ arranged at a suitable point to permit the parallelogram to oscillate to-and-fro, thus carrying the needle across the face of the indicator dial 1, as shown in Fig. 3. This movement is communicated by means of a short link 8 attached to the parallelogram at one end, and at the other being attached to a bell crank 9 which is pivoted at 10. The other end of this bell crank is connected to a short lever 11 by means of a rod 12, suitably fixed thereto. The lever 11 is fixedly attached to a shaft 12′ and is actuated by rocking the finger tablet 13. At the outer end of the shaft 12′ is attached a somewhat longer lever 14 which actuates a short lever 15 by means of another rod 16. Lever 15 is mounted upon a short shaft 17 which is mounted in a suitable portion of the frame 18 of the instrument, and has at its opposite end a lever 19 which is connected to a lever 20, said lever 20 operating the front board 21 of the bellows 22.

In Fig. 1 is shown a sectional view of the bellows 22. It will be noted that the front board 21 is connected to the air chamber 22 by means of a flexible covering of leather or like material 23, and interiorly is suitably attached a lever 24 which in turn operates a valve 25 which controls the port 26 in said air chamber.

By pressing upon the tablet 13 and causing it to rock on either side, the board 21 is caused to move in or out and simultaneously the needle is caused to move across the face of the tablet 1. By proper adjustment, the characters on the tablet can be so arranged as to indicate the amount of control or throttling of the valve 25 that is caused by the action of the outer board 21.

As a means for indicating the before mentioned degree of accelerating and retarding, I have here shown the characters in arithmetical progression running from 0 to 90, and as each of these characters represents a certain amount of closure of the valve 25, relatively more or less, it can be seen that by placing these characters on a music roll, preferably on the right hand side, that the degree of variation of the tempo from one phrase to the succeeding phrase can be indicated in precise value, as indicated in Fig. 7. It will be noted that the tempo of the roll in Fig. 7 is 50, and that the row of figures at the right hand side which expresses the values of the phrases are indicated by figures similar to those on the tablet 1 and that the difference in the tempo of these phrases is precisely expressed. As compared with the markings in Fig. 8 it can be seen that nothing is left to the operator in my present improved form of marking, for, as hereinbefore stated, the precise amount of regulation is indicated by my improved means and is under the control of the operator.

In Fig. 6 I have shown another form of tablet wherein the tracker-bar 41 has an indicating line 42 thereon and the character tablet 43 is shiftable and controlled by the same mechanism, as indicated in Fig. 2.

In Fig. 9 is shown the means for etting

the tempo control, such as 50 indicated in Fig. 7. This device comprises a needle 28 having a lower platform extension 30. In Fig. 10 this platform is shown as having considerable width for the purpose of supporting two springs 31 and 32, which are arranged on said platform and underneath the opposite ends of the finger tablet 13. A sleeve 29, which may be driven into a convenient portion of the rail or key-board support and having a head 33 on its opposite end, clamps and carries the needle 28. The inside of the needle 28 is in contact with a soft washer 34 which may be of leather or felt and similarly a washer 36 is in engagement between the head 33 and the needle 28. This construction is used so as to create a friction between the needle 28 and its fixed bearing member 29 and cause it to be held to any adjusted position, which position is held throughout the playing of the piece for which it is set. A dial 37 having characters similar to those of the tablet 1, Fig. 3, is arranged so that the needle will be in opposition thereto. When the needle 28 is shifted about its axis to set the tempo control to any desired number its depending platform 30 will also be swung therewith. This in turn causes the two springs 31 and 32 to force the finger tablet 13 which is fixedly mounted on the rocker shaft 12′ to be moved the same amount. It is obvious that this movement will be then transmitted by the tablet 13 through the system of links to the parallelogram 2 and to the valve 25, thereby controlling the speed of the operating mechanism. The needle 4 on the parallelogram 2, Fig. 2, is then shifted thereon so that the character it indicates is the same as that indicated by the tempo needle 28. This needle 4 is the only one that operates across the dial during the playing of the piece. It is clear from the foregoing that any variation by the fingers on the finger tablet 13 will cause the tempo control of the mechanism throughout to operate to retard or accelerate accordingly as the valve 25 is opened or closed, and this movement will be indicated by the said needle. Should the operator during the manipulation of the instrument release control of the finger tablet 13, the springs resting upon the platform 30 of the fixed needle 28 would immediately bring the tablet 13 back to its pre-set position, thereby holding the valve in one position and setting the mechanism to control the further playing of the piece in strict tempo. This action is caused by the frictionally held needle 28, which, throughout the playing of the piece maintains its set position, and through the springs 31 and 32 resting upon its platform 30, causes the tablet 13 to assume a parallel position thereto, thereby setting the linkage that controls the indicator needle 4 and the valve 25.

Having thus described my invention, I claim:

1. In a mechanical musical instrument, the combination with a music roll and actuating mechanism therefor, of a speed control for the actuating mechanism, means for shifting the speed control, means for retaining the speed control in said shifted position, an operative member comprising a plate pivoted at its intermediate portion and adapted to be engaged on one face to be oscillated by the operator, said member being connected with the speed control means to shift it from said pre-set position, and means for returning the said speed control member and manually operated member automatically to the pre-set position when released.

2. In a mechanical musical instrument, the combination with a music roll and actuating mechanism therefor, of a speed control for the actuating mechanism, means for shifting the speed control, means for retaining the speed control in said shifted position, an operative member comprising a plate pivoted at its intermediate portion and adapted to be engaged on one face to be oscillated by the operator, said member being connected with the speed control means to shift it from said pre-set position, means for returning the said speed control member and manually operated member automatically to the pre-set position when released, an indicator on the instrument, and a pointer mounted to move across the indicator and operatively connected with the said controlling device to be shifted according to the movement of the said manually operative member.

3. In a mechanical musical instrument, the combination with a music roll and actuating mechanism therefor, of a speed control for the actuating mechanism, means for shifting the speed control, means for retaining the speed control in said shifted position, an operative member connected with the speed control means to shift it from said pre-set positions, means for returning the said speed control member and said operative member automatically to the pre-set positions when released, a pair of levers each pivoted at an intermediate portion, a link connecting one end of each of the levers, a link connecting the other end of each of the levers and of equal length with said link to form a movable parallelogram, means connecting one of said levers with the manually controlled member, a tablet on the instrument, and a pointer on the link that is shifted along the tablet by the movement of the link to indicate the change of tempo by the operation of the manually controlled member.

4. In a mechanical musical instrument, the combination with a music roll and means

for actuating the roll, of a control for the actuating means to regulate the tempo, manually operative means for said member including a rock shaft, an arm mounted by its intermediate portion loose on the rock shaft, a pointer carried by said arm, a tablet having indications arranged to indicate the position of the arm, frictional means for holding the pointer and arm in adjusted positions, a cross arm secured at its intermediate portion to said shaft to rock the shaft and arranged in proximity to said arm, and a pair of springs one on each side of the shaft between the respective ends of said arms and arranged to retain the arms parallel whereby when the said arm secured to the shaft has been swung by the operator to shift the shaft and controlling means connected therewith in either direction to vary the tempo faster or slower from any given set position of the other arm and pointer said springs will return the arm and shaft to set position when released.

5. In a mechanical musical instrument, the combination with a music roll and means for actuating the roll, of a control for the actuating means to regulate the tempo, manually operative means for said member including a rock shaft, an arm mounted by its intermediate portion loose on the rock shaft, a pointer carried by said arm, a tablet having indications arranged to indicate the position of the arm, frictional means for holding the pointer and arm in adjusted positions, a cross arm secured at its intermediate portion to said shaft to rock the shaft and arranged in proximity to said arm, and a pair of springs one on each side of the shaft between the respective ends of said arms and arranged to retain the arms parallel whereby when the said arm secured to the shaft has been swung by the operator to shift the shaft and controlling means connected therewith in either direction to vary the tempo faster or slower from any given set position of the other arm and pointer said springs will return the arm and shaft to set position when released, a second pointer that is connected with the speed control and actuated thereby, and a tablet over which the latter pointer moves to indicate the tempo at which the control is set.

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."