No. 877,027. PATENTED JAN. 21, 1908.

J. A. WESER.

MECHANICAL MUSICAL INSTRUMENT.

APPLICATION FILED MAR. 15, 1907.

3 SHEETS—SHEET 1.

Fig. 1.

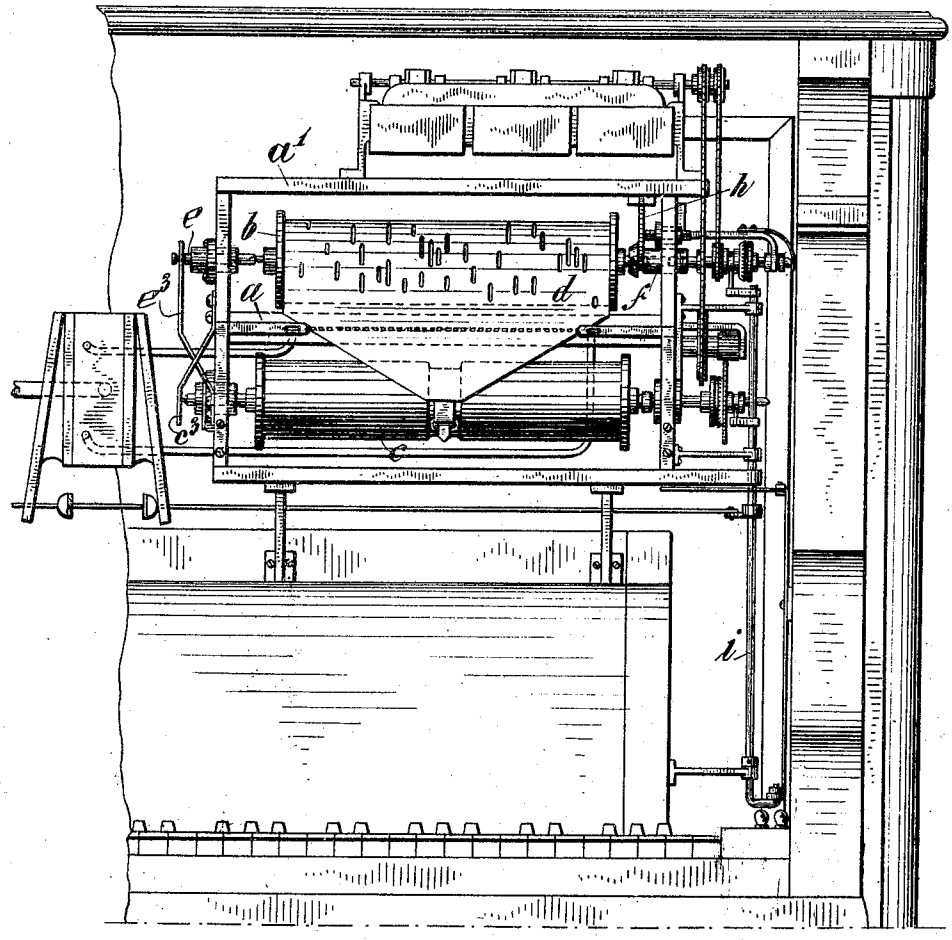


Fig. 2.

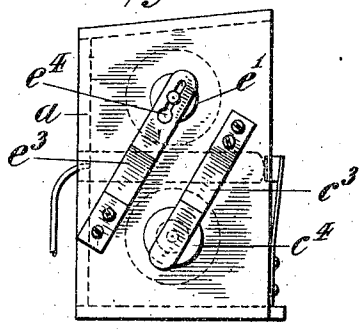
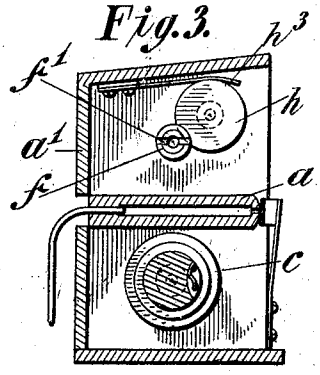


Fig. 3.



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Jos. L. Amon

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3 SHEETS—SHEET 2.

Fig. 4.

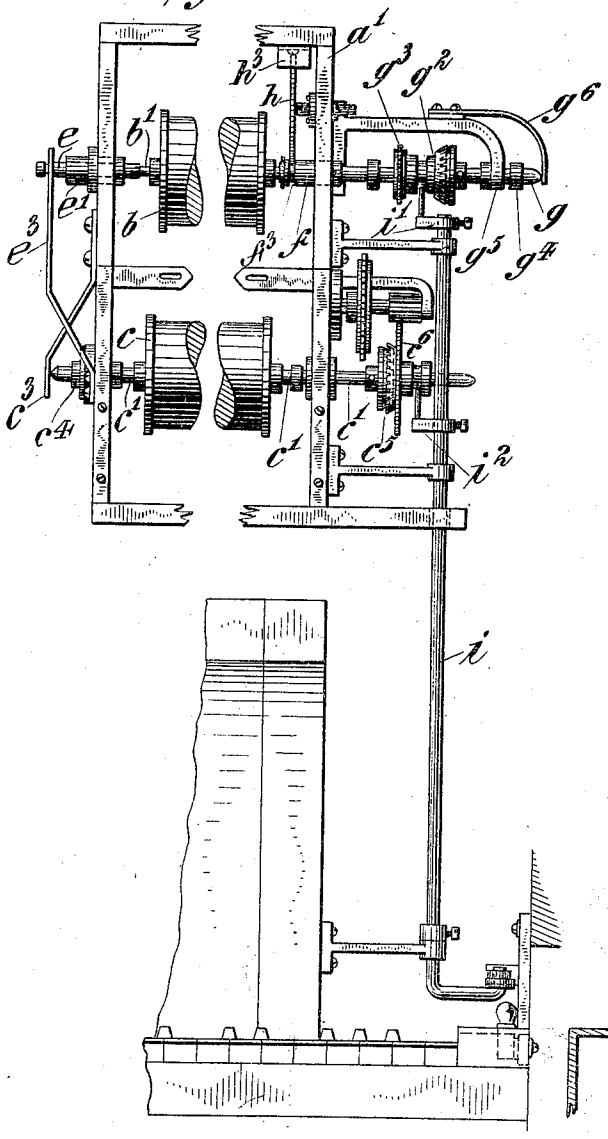
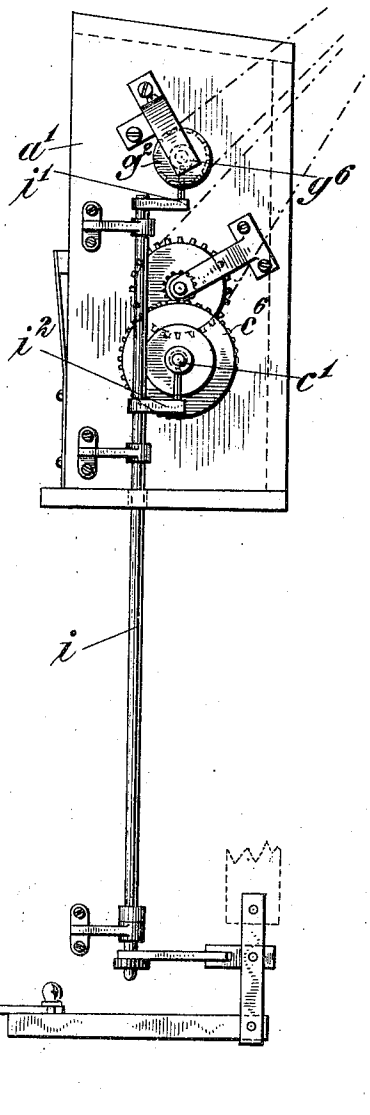


Fig. 5.



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No. 877,027. PATENTED JAN. 21, 1908.

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MECHANICAL MUSICAL INSTRUMENT.

APPLICATION FILED MAR. 16, 1907.

3 SHEETS—SHEET 3.

Fig. 6.

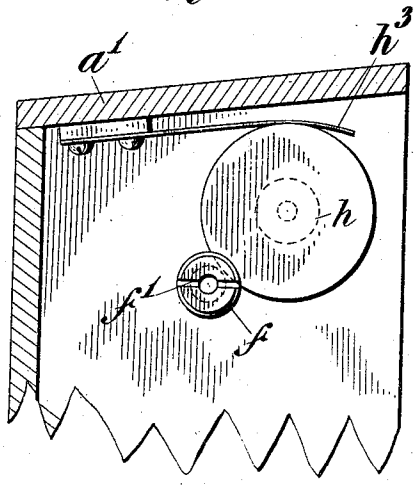


Fig. 7.

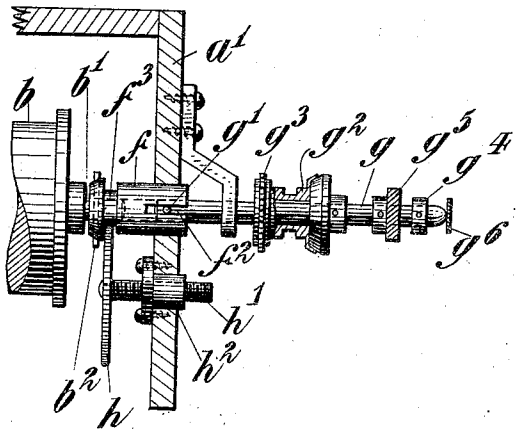


Fig. 8.

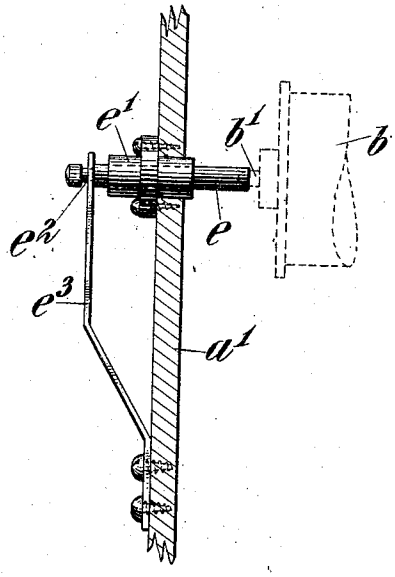
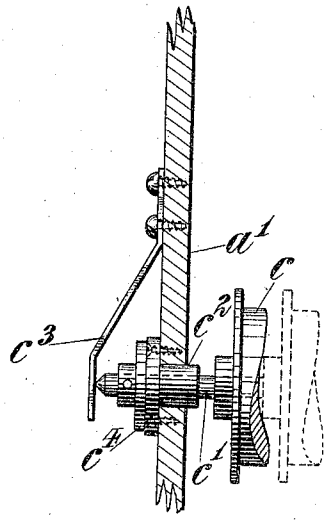


Fig. 9.



Witnesses:

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UNITED STATES PATENT OFFICE.

JOHN A. WESER, OF NEW YORK, N. Y.

MECHANICAL MUSICAL INSTRUMENT.

No. 877,027. Specification of Letters Patent. Patented Jan. 21, 1908.

Application filed March 15, 1907. Serial No. 362,456.

To all whom it may concern:

Be it known that I, JOHN A. WESER, a citizen of the United States, residing in the borough of Manhattan of the city of New York, have invented certain new and useful Improvements in Mechanical Musical Instruments, of which the following is a specification, reference being had to the accompanying drawings, forming a part hereof.

This invention relates to the tracker box mechanism or mechanism for supporting and effecting and controlling the movement of the perforated music sheet which cooperates with the tracker board in pneumatic players for pianos and organs and is particularly concerned with the means for supporting and controlling the music sheet and transfer rolls.

One object of the invention is to provide an improved device for shifting the music sheet roll in an axial direction for the purpose of placing either one of several sets of perforations of a multiple tune sheet in proper relation to the perforations of the tracker board.

Another object is to provide improved devices for checking the unwinding of the rolls respectively so that neither roll shall overrun when the music sheet is being wound upon the other.

The invention will be more fully described hereinafter with reference to the accompanying drawings in which it is illustrated as embodied in a tracker box mechanism of otherwise ordinary construction, and in which—

Figure 1 is a view in front elevation of the tracker box mechanism and adjacent portions of an automatic piano to which the improvements are applied. Fig. 2 is an end elevation of the tracker box as seen from the left hand in Fig. 1. Fig. 3 is a vertical transverse section of the tracker box, the music roll being removed. Fig. 4 is a front view of the tracker box mechanism and its associated parts on a larger scale and partly broken away. Fig. 5 is an end elevation of the tracker mechanism as seen from the right hand in Fig. 4. Fig. 6 is a detail view of a portion of the tracker box mechanism in elevation as seen from the inside of the tracker box looking toward the right hand in Fig. 1. Fig. 7 is a detail plan view of the parts shown in Fig. 6 and some of the associated parts, the brake spring being omitted. Figs. 8 and 9 are detail views of the supports for the left hand end of the music rolls.

In the drawings the improved tracker box mechanism is shown as applied to an automatic piano, but it will be obvious that it might equally well be applied to a piano player independent of the piano. As is usual in devices of this character, the perforated tracker board a is located in the tracker box a' within which are mounted, as hereinafter described, the music sheet roll b and the transfer or winding roll c, the music sheet roll b being movable longitudinally to permit the various sets of perforations of the multiple tune music sheet d to be brought into proper relation with respect to the perforations in the tracker board a, so that one or another of the tunes shall be performed, the winding on roll c being sufficiently longer than the music sheet roll b to accommodate the lateral movement of the music sheet.

At its left hand end the spindle b' of the music sheet roll b rests in a socket in the end of a spindle e which is mounted in a suitable bearing e' carried by the side wall of the tracker box. At its outer end the spindle e is notched or shouldered circumferentially, as at e^2, for engagement with a flat spring e^3 which is secured to the tracker box and presses the spindle e and therefore the roll b toward the right. The spring has a key hole slot e^4, as shown in Fig. 2, and in applying the spring it is first engaged with the spindle, the larger portion of the key hole slot slipping freely over the end of the spindle, and is then moved so that the narrower portion of the slot shall engage the notch of the spindle, after which the spring is secured to the wall of the tracker box. This construction prevents accidental disengagement of the parts and moreover the flat spring is found to be more nearly noiseless in operation than the coiled spring sometimes employed.

At the right hand end, the spindle b' rests in a socket of the driving head f and carries a key or pin b^2 to engage a transverse slot f' for driving engagement with the head. In the improved construction the driving head f is formed as a sleeve having a suitable bearing in the side wall of the tracker box, in which bearing it is movable longitudinally. The sleeve has a driving engagement with the driving shaft g, being slotted longitudinally, as at f^2, in the construction shown, for engagement with a driving pin g' carried by

the shaft g. For longitudinal adjustment from time to time to bring one or another set of perforations of the music sheet into registration with the perforations of the tracker board, the driving head f is slotted circumferentially, as at f^3, and is engaged loosely by a disk h, preferably milled on its edge for convenience in grasping; and fixed to a screw threaded stud h' mounted in a threaded bearing h^2 carried by the end wall of the tracker box. A brake spring h^3 cooperates with the disk to prevent accidental movement thereof. It will now be seen that when the disk h is grasped by the fingers and rotated it will also be caused to move axially in one direction or the other and will carry with it the driving head f and the music roll b, thus effecting the desired shifting of the music sheet to one side or the other as may be required.

The driving shaft g is provided as usual with a driving clutch g^2, the loose member of which is provided with a driving gear g^3 and is engaged by an arm i' of the clutch operating shaft i. The shaft g also carries a brake disk g^4, which, when the clutch is open, is pressed against the frame member g^5 by a flat spring g^6 which bears against the end of the shaft to check the rotation of the shaft and consequently of the music roll b when the music sheet is being unwound therefrom and so prevent overrunning of the roll and too much slack in the music sheet. When the clutch g^2 is closed the pressure of the movable member against the fast member thereof moves the shaft g against the tension of the spring g^6 and carries the brake disk or collar g^4 away from the frame member g^5, thus relieving the shaft of the brake friction during the rewinding of the music sheet on the music roll b.

As the winding-on roll c remains permanently in the tracker box its spindle c' is extended through the bearing c^2 provided therefor in the wall of the tracker box and bears against the flat spring c^3 which is secured to the wall of the tracker box. Outside of the wall of the tracker box the spindle c' has secured to it a brake disk c^4 which is pressed by the action of the spring c^3 upon the spindle against the wall of the tracker box or against the outer end of the bearing c^2, creating sufficient friction to check the backward rotation of the roll c when the music sheet is being rewound upon the music roll b and thus to prevent overrunning of the roll and undue slackness of the music sheet. The roll c is driven by a clutch c^5, the movable member of which carries a driving gear c^6 and is engaged by an arm i^2 of the clutch operating shaft i. When the clutch is closed the shaft or spindle c' is moved to the left carrying with it the brake disk c^4 and thus relieving, during the winding-on, the braking friction which is otherwise exerted on the shaft of the winding-on roll.

I claim as my invention:

1. In a tracker box mechanism for automatic pianos, etc., the combination with the music roll and its driving shaft of a driving head having a driving engagement with the roll and with the shaft and movable longitudinally to shift the roll, and means engaging said head to shift the same longitudinally.

2. In a tracker box mechanism for automatic pianos etc., the combination with the music roll and its driving shaft of a driving head having a driving engagement with the roll and with the shaft and movable longitudinally, said head being slotted circumferentially, and a disk engaging the slotted head and movable axially to shift the head and the roll with it.

3. In a tracker box mechanism for automatic pianos etc., the combination with the music roll and its driving shaft of a driving head having a driving engagement with the roll and with the shaft and movable longitudinally, said head being slotted circumferentially, and a screw threaded stud mounted adjacent to the driving shaft and carrying a disk engaging the slotted driving head.

4. In a tracker box mechanism for automatic pianos etc., the combination with the music roll and its driving shaft of a sleeve like head having a driving engagement with the roll, slotted longitudinally for engagement with the shaft to rotate therewith and be movable longitudinally with respect thereto and slotted circumferentially, and a screw threaded stud mounted adjacent to the shaft and having a disk engaging the circumferential slot of the head.

5. In a tracker box mechanism for automatic pianos etc., the combination with the music roll and its driving shaft of a driving head having a driving engagement with the roll and with the shaft and movable longitudinally, said head being slotted circumferentially, a screw threaded head mounted adjacent to the driving shaft and carrying a disk engaging the slotted driving head and a brake applied to said disk.

6. In a tracker box mechanism for automatic pianos etc., the combination of a music roll, a driving shaft therefor, a driving clutch on the shaft, a friction disk mounted on the shaft to coöperate with a frame member and a flat spring bearing against the end of the shaft to press the friction disk toward the frame member and to permit the friction disk to be moved away from the frame member by the pressure of the clutch.

7. In a tracker box mechanism for automatic pianos etc., the combination of a tracker box, a music roll, a longitudinally movable spindle mounted in the wall of the tracker box and having its outer end slotted circumferentially and adapted to support the

roll spindle, and a flat spring having a slot to engage the circumferential slot of said spindle.

8. In a tracker box mechanism for automatic pianos etc., the combination of a tracker box, a winding-on roll having its shaft mounted in the walls of the tracker box, a driving clutch on said shaft, a flat spring bearing against said shaft axially in a direction to open the clutch and a friction disk secured to said shaft and pressed by the action of the spring against a frame member to exercise a braking action on the roll.

This specification signed and witnessed this 13th day of March, A. D., 1907.

JOHN A. WESER.

Signed in the presence of—

SAMUEL GOOTENBERG,

CONRAD HAIRIS.